

# Guide to Environmental Compliance Afloat



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# Foreword

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The *Guide to Environmental Compliance Afloat* was compiled by the Ships Environmental Support Office (SESO) at the request of the Ship Environmental Protection Process Action Team (SEP PAT). The SEP PAT is chartered by Chief of Naval Operations (CNO N45), chaired by Naval Sea Systems Command (NAVSEA 03), and led by Deputy Director, Environmental Protection Division, NAVSEA 03L1B.

The SEP PAT is established to affect those actions essential to achieve the goal of an environmentally sound ship through technology, training, policies, and procedures. The PAT communicates with the Fleet to identify environmental issues and to keep the Fleet informed of environmental programmatic developments within CNO and NAVSEA.

This single source reference guide is a compilation of regulatory requirements specific to afloat units. ***It is imperative that referenced documents be reviewed to ensure compliance with the most current regulatory requirements prior to taking action.*** Consult your ship's Afloat Environmental Protection Coordinator (AEPC) to ensure you are complying with the most recent directive.

Per OPNAVINST 5090.1B, 1-1.4, Precedence: "This instruction (OPNAVINST 5090.1B) is the primary guidance for Navy policies and procedures for managing environmental and natural resource programs, and any apparent conflict between this instruction and other Navy instructions, manuals and similar directives on environmental and natural resource programs will be resolved in favor of this instruction. This instruction was designed to be and will be construed to be consistent with all applicable statutes, Executive Orders (EOs), Department of Defense (DOD) directives and Department of Navy (DON) instructions."

Additional copies of the Guide to Environmental Compliance Afloat can be obtained from the Ships Environmental Support Office at (301) 227-5245, DSN 287-5245, or e-mail: [seso@nswccd.navy.mil](mailto:seso@nswccd.navy.mil).

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- Appendix H: Oil Spill Report
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### ***Air***

- ODS Advisories:
  - 95-01: Mission Critical Applications of Class I Ozone-Depleting Substances
  - 96-01B: ODS Supply Support
  - 96-03: Shipboard Refrigerant Leak Repair and Record Keeping

### ***Hazardous Material***

#### ***OPNAVINST 5100.19C, Change 2, Chapter 23: Surface Ship Hazardous Material Control and Management Standards***

- Appendix C23-A: Hazardous Material/Hazardous Waste Containers
- Appendix C23-B: Navy Used Hazardous Material Identification Label
- Appendix C23-C: Hazardous Material Compatibility Storage Diagram
- Appendix C23-D: HMIS Coding and Storage Requirements
- Appendix C23-E: PCB Labels

#### ***OPNAVINST 5100.19C, Change 2, Chapter B3: Hazardous Material Control and Management***

- Appendix B3-A: Hazardous Material Spill Response Procedures (Surface Ships Only)
- Appendix B3-B: Mercury Spill Response and Cleanup Procedures (Surface Ships Only)

#### ***OPNAVINST 5100.19C, Change 2, Chapter D15: Submarine Hazardous Material Control and Management***

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COMNAVSUPSYSCOM MECH PA 050809 MAR 97 (Consolidated  
Hazardous Material Reutilization and Inventory Management Program  
(CHRIMP) and Hazardous Inventory Control System (HICS) Information  
Bulletin)  
CNO WASH DC 081640Z DEC 98 (Hazardous Material (HM) Offload  
Standardization)  
COMNAVSEA WASH DC 060340Z APR 99 (NAVSEA - Approved NESHAP  
- Compliant Coatings)

## ***Solid Waste***

Solid Waste Sorting Charts

Solid Waste Messages:

COMNAVSEA WASH DC 040348Z JAN 99 (Prohibition of Plastic Waste  
Discharge at Sea)  
COMNAVSEA WASH DC 230348Z NOV 98 (Plastic Waste Management  
Without PWP)  
COMNAVSEA WASH DC 230349Z NOV 98 (NAVSEA Fleet Solid  
Waste Conferences Lessons Learned)  
COMNAVSEA WASH DC 260348Z NOV 96 (PWP Fleet Advisory No. 1:  
Early Fuse Problem)  
COMNAVSEA WASH DC 260348Z FEB 97 (PWP Fleet Advisory No. 97-  
2: OBB Bags)  
COMNAVSEA WASH DC 110349Z MAR 97 (PWP Fleet Advisory No.  
97-3: 30 Minute CMU Warm-up)  
COMNAVSEA WASH DC 040348Z JUN 97 (PWP Fleet Advisory No. 97-  
4: Mold Release Agent)  
NSWCCD-SSES PHIL PA301935Z JAN 98 (PWP Fleet Advisory No. 98-  
5: Electrical Enclosure Wiring)  
COMNAVSEA WASH DC 120348Z MAR 98 (PWP Lessons Learned  
Fleet Advisory No. 98-6)

## ***Oil Pollution Abatement***

COMNAVSEA WASH DC 010348Z MAY 98 (Oil Pollution Abatement  
(OPA) Equipment Advisory)  
NSWCCD-SSES PHIL PA 221410Z JUL 99 (ET-35N Oil Content Monitor  
(OCM) Calibration Program)

# Resources

	Air Emissions	HAZMAT	Medical Dental	Non-Oily Wastewater	Oil & Oily Wastewater	Solid Waste
OPNAVINST 5090.1B, Environmental and Natural Resources Program Manual	X	X	X	X	X	X
Video: <i>Your Ship, The Environment, and You</i> (NAVSEA)	X	X	X	X	X	X
U. S. Navy Pollution Discharge Restrictions “Whiz Wheel” (OPNAV P-45-111-3-98)		X	X	X	X	X
OPNAVINST 5100.19C, NAVOSH Program Manual for Forces Afloat	X	X				
Marine Mammals Protection Act		X	X	X	X	X
Video: <i>The U.S. Navy and Protection of Right Whales in the Southeastern U.S.</i> (PIN 806220)		X	X	X	X	X
Clean Air Act	X					
NESHAP for Shipbuilding and Ship Repair (Surface Coating/Painting Operations), 40 CFR 63, Subpart II	X					
Naval Ships Technical Manual, Chapter 221	X					
Ships Hazardous Material List <a href="http://www.nll.navsup.navy.mil/shml/shmlmain.cfm">http://www.nll.navsup.navy.mil/shml/shmlmain.cfm</a>	X	X				
Submarine Material Control List	X	X				
Video: <i>The Navy's Search for Alternatives to Ozone-Depleting Chemicals</i> (PIN 806032)	X					
Video: <i>Alternatives to Ozone-Depleting Substances</i> (PIN 806020)	X					
Video: <i>Operation and Maintenance of the ST-100A and ST-1000 Refrigerant Recovery Units</i> (PIN 806024)	X					
Video: <i>Operation of the U.S. Navy Trailer-Stowed Refrigerant Recovery Unit</i> (PIN 806025)	X					
Video: <i>EPA Certification Training for Air-Conditioning and Refrigeration Technicians</i> (PIN 806031)	X					
Video: <i>Halocarbon (Refrigerant) Monitor Familiarization</i> (PIN 806230)	X					
Video: <i>Reducing Shipboard Halon Emissions</i>	X					
OPNAV Publication P-45-114-93, Chief of Naval Operations Policy Guide for Shipboard Hazardous Material Container Disposal		X				
OPNAVINST 3100.6G, Special Incident Reporting (OPREP 3, Navy Blue and Unit SITREP) Procedures (NOTAL)		X				
OPNAV Publication P-45-110-91, Hazardous Material User's Guide		X				

## Applicable Resources (continued)

	Air Emissions	HAZMAT	Medical Dental	Non-Oily Wastewater	Oil & Oily Wastewater	Solid Waste
<b>COMNAVSUPSYSCOM MECH PA 050809 MAR 97</b> - Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) and Hazardous Inventory Control System (HICS) Information Bulletin		X				
<b>CNO WASH DC//N45 081640Z DEC 98</b> - Hazardous Material (HM) Offload Standardization						
<b>COMNAVSEA WASH DC 060340Z APR 99</b> - Approved NESHAP-Compliant Coatings		X				
<b>NAVMED Publication P-5010-7, Manual for Naval Preventive Medicine, Sewage Disposal Ashore and Afloat (NOTAL)</b>			X			
<b>COMNAVSURFLANTINST 6000.1G, Shipboard Medical Procedures Manual</b>			X			
<b>COMNAVSURFPACINST 6000.1F, Shipboard Medical Procedures Manual</b>			X			
<b>U.S. Public Vessel Medical Waste Anti-Dumping Act</b>			X			
<b>Video: U.S. Navy Presents Management of Medical Waste Afloat (PIN 805974)</b>			X			
<b>NSWCCD Shipboard Medical Waste RDT&amp;E Program Page:</b> <a href="http://www.dt.navy.mil/code60/code63/code632/shiphmcmprograms/medical/index.htm">http://www.dt.navy.mil/code60/code63/code632/shiphmcmprograms/medical/index.htm</a>			X			
<b>Clean Water Act</b>				X	X	X
<b>International Maritime Convention for the Prevention of Pollution from Ships, Annex I (MARPOL)</b>					X	
<b>Oil Pollution Act</b>					X	
<b>Guidebook for Oil Pollution Abatement Systems on Surface Ships (NAVSEA S9593-CP-GYD-010)</b>					X	
<b>COMNAVSEA WASH DC 010348Z MAY 98</b> - Oil Pollution Abatement (OPA) Equipment Advisory					X	
<b>Video: ET-35N Oil Content Monitor and OPB-10NP Oil Water Separator Operations (NSWCCD)</b>					X	
<b>Video: ET-35N Oil Content Monitor and OPB-10NP Oil Water Separator Maintenance (NSWCCD)</b>					X	
<b>Video: OMWW0300 Oil Content Monitor Operations and Maintenance (NSWCCD)</b>					X	
<b>NSWCCD-SSS PHIL PA 221410Z JUL 99</b> - ET-35N OCM						
<b>The Act to Prevent Pollution from Ships</b>					X	X

## Applicable Resources (continued)

	Air Emissions	HAZMAT	Medical Dental	Non-Oily Wastewater	Oil & Oily Wastewater	Solid Waste
<b>International Maritime Convention for the Prevention of Pollution from Ships, Annex V (MARPOL)</b>						X
<b>Ocean Dumping Act (ODA)</b>						X
<b>COMNAVSEA WASH DC 040348Z JAN 99</b> - Prohibition of Plastic Waste Discharge At Sea						X
<b>COMNAVSEA WASH DC 230348Z NOV 98</b> - Plastic Waste Management Without PWP						X
<b>COMNAVSEA WASH DC 230349Z NOV 98</b> - NAVSEA Fleet Solid Waste Conferences Lessons Learned						X
<b>Plastic Waste Processor Fleet Advisories 1-6:</b> COMNAVSEA WASH DC 260348Z NOV 96 COMNAVSEA WASH DC 260348Z FEB 97 COMNAVSEA WASH DC 110349Z MAR 97 COMNAVSEA WASH DC 040348Z JUN 97 NSWCCD-SSES PHIL PA 301935Z JAN 98 COMNAVSEA WASH DC 120348Z MAR 98						X
<b>Shipboard Solid Waste Management Equipment Guide</b>						X
<b>Video: War on Pollution: The U.S. Navy's New Weapon to Fight Plastics Pollution at Sea (PIN 806433)</b>						X
<b>Video: War on Pollution II: Pulpers and Shredders: The U.S. Navy's Newest Weapons to Fight Solid Waste Pollution at Sea (NAVSEA)</b>						X
<b>PREINSURV NORFOLK VA 031330Z AUG 98</b> – INSURV Quarterly Surface Ship Message NR 001		X		X	X	X



# Web Sites

Address	Title/Description
<a href="http://www.navyseic.com/">http://www.navyseic.com/</a>	Navy Shipboard Environmental Information Clearinghouse
<a href="http://www.denix.osd.mil/">http://www.denix.osd.mil/</a>	Defense Environmental Network & Information eXchange (DENIX)
<a href="http://www.acq.osd.mil/ens/">http://www.acq.osd.mil/ens/</a>	Office of the Deputy Under Secretary of Defense (Environmental Security)
<a href="http://enviro.navy.mil/">http://enviro.navy.mil/</a>	Department of the Navy Environmental Program
<a href="http://206.5.146.100/n45/">http://206.5.146.100/n45/</a>	CNO Environmental Program
<a href="http://206.5.146.100/n45/doc/unds/unds.html">http://206.5.146.100/n45/doc/unds/unds.html</a>	Uniform National Discharge Standards (UNDS) Home Page
<a href="http://www.dt.navy.mil/code60/code63/code632/index.htm">http://www.dt.navy.mil/code60/code63/code632/index.htm</a>	Pollution Prevention and Materials Safety Branch
<a href="http://www.dt.navy.mil/code60/code63/code632/seso/index.htm">http://www.dt.navy.mil/code60/code63/code632/seso/index.htm</a>	The Ships Environmental Support Office (SESO)
<a href="http://www.navsea.navy.mil/sea00tWWW/">http://www.navsea.navy.mil/sea00tWWW/</a>	Naval Sea Systems Command (NAVSEA) 00T Environmental Protection, Occupational Safety and Health Web Site
<a href="http://www.dt.navy.mil/code60/code63/code632/shiphmcmprograms/medical/index.htm">http://www.dt.navy.mil/code60/code63/code632/shiphmcmprograms/medical/index.htm</a>	NSWCCD Shipboard Medical Waste RDT&E Program Page
<a href="http://www-nehc.med.navy.mil/index.htm">http://www-nehc.med.navy.mil/index.htm</a>	Navy Environmental Health Center
<a href="http://www.nll.navsup.navy.mil/shml/shmlmain.cfm">http://www.nll.navsup.navy.mil/shml/shmlmain.cfm</a>	Ships Hazardous Material List
<a href="http://www.norva.navy.mil/navosh/">http://www.norva.navy.mil/navosh/</a>	Naval Occupational Safety and Health, and Environmental Training Center (NAVOSHENVTRACEN) Web Site
<a href="http://www.navosh.net/">http://www.navosh.net/</a>	Navy Occupational Safety and Health Office (N454)
<a href="http://www.navyrecycling.com">http://www.navyrecycling.com</a>	U.S. Navy Recycling Program
<a href="http://www.safetycenter.navy.mil/">http://www.safetycenter.navy.mil/</a>	Naval Safety Center
<a href="http://www.epa.gov">http://www.epa.gov</a>	Environmental Protection Agency
<a href="http://www.cnet.navy.mil/netpdtc/step/index.html">http://www.cnet.navy.mil/netpdtc/step/index.html</a>	Naval Education and Training Professional Development and Technology Center (NETPDTC) - Shipboard Training Enhancement Program (STEP) Courses
<a href="http://www.imo.org/">http://www.imo.org/</a>	International Maritime Organization (IMO)

# **OPNAVINST 5090.1B, Change 2**

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## CHAPTER 19

### ENVIRONMENTAL COMPLIANCE AFLOAT

#### 19-1 Scope

**19-1.1 General.** This chapter defines environmental compliance policies and procedures applicable to shipboard operations. Since this chapter applies only to ships and floating drydocks and covers all media, its format is different from the remainder of the manual. Organization is according to the various pollutants produced aboard ship. Each section lists the applicable legislation, definitions, requirements, policy and training. The end of the chapter contains a summary of responsibilities by command.

Topics covered in this chapter are as follows:

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#### 19-1.2 Applicability.

a. This chapter applies to U.S. Navy ships and floating drydocks worldwide. As appropriate,

it applies to the boats and other craft carried by these ships. This chapter also applies to those ships under contract to the Commander, Military Sealift Command (COMSC) that are public vessels of the United States (U.S.). Vessels owned or bareboat chartered and operated by the MSC are public vessels. This chapter does not apply to those ships under contract to COMSC that are not public vessels, such as ships that are time or voyage chartered.

b. Ships need only refer to this chapter and chapter 21 (Ocean Dumping) for environmental compliance. If differences in policy exist between this chapter and any other chapter in this instruction, this chapter takes precedence.

**19-1.3 References.** Relevant references for this chapter are:

- a. Naval Warfare Publication (NWP) 4-11, Environmental Protection; (NOTAL). (A)
- b. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair (Surface Coating/Painting Operations), 40 CFR 63, SUBPART II; (NOTAL) (A)
- c. Naval Ships' Technical Manual (NSTM); (NOTAL)
- d. OPNAVINST 5100.19C, Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat; (NOTAL)
- e. OPNAVINST 3100.6G, Special Incident Reporting (OPREP 3, Navy Blue and Unit SITREP) Procedures; (NOTAL)

f. NAVFACENGCOM Manual MO 909 (Oil Ship Waste Offload Barge); (NOTAL)

g. DOD Instruction 4715.4 of 1 June 1998, Pollution Prevention (NOTAL)

h. NAVSEA PCB Advisories; (NOTAL)

A)

i. OPNAV P-45-113-3-99, Afloat Medical Waste Management Guide (NOTAL)

j. NAVMED Publication P-5010-7, Manual for Naval Preventative Medicine, Sewage Disposal Ashore and Afloat; (NOTAL).

## 19-2 General

### 19-2.1 Terms and Definitions

**19-2.1.1 Contiguous Zone.** A zone of the ocean extending from 3-12 nm from the U.S. coastline.

**19-2.1.2 Navigable Waters.** The territorial sea and internal waters (rivers, lakes) of the U.S.

**19-2.1.3 Territorial Sea.** For purposes of this instruction, a zone of the ocean extending from the U.S. coastline out to 3 nm from shore.

**19-2.1.4 United States.** For the purposes of this chapter, the U.S. includes the Commonwealth of Puerto Rico, Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Marianas Islands.

### 19-2.2 Navy Policy

**19-2.2.1 Environmentally Sound Ships.** Protection of the marine environment is mission essential. Navy ships shall conduct operations, in port and at sea, minimizing or eliminating any adverse impact on the marine environment.

**19-2.2.2 Shoreside Support to Ships.** Compliance with local environmental requirements often requires specialized knowledge, expertise or capability that afloat units may lack. To the maximum

extent possible, shore commands and Regional Environmental Coordinators (RECs) shall provide to afloat units, upon request, such assistance as may be necessary to ensure their environmental compliance.

**19-2.2.3 Environmental Inspection of Navy Ships.** Within the U.S., Navy ships shall be available for inspection by environmental officials, provided the inspector demonstrates a legitimate basis for requesting access, and subject to the requirements to protect national security information. Section 19-2.2.3.1 addresses access to Navy ships and release of information regarding Navy oil spills. Section 19-2.2.3.2 addresses access to Navy ships for all other environmental purposes.

(R)

**19-2.2.3.1 Access to Ships and Release of Information During Navy Oil Spills.** Effective oil spill planning and response is an important issue for the Navy, for regulatory agencies, and for the public. Navy ships may receive requests from non-Navy entities for access and/or information pertaining to Navy oil spill planning and response. Commanding officers shall consider several factors in responding to these requests. First, they shall quickly provide officials and agencies responsible under law and regulation responding to an actual spill with the necessary access and/or information to minimize environmental damage and Navy liability. Second, they shall ensure all access granted and information disseminated is consistent with Navy information security requirements. Third, they shall ensure that initial information released about oil spills is as accurate as possible and that it is characterized as preliminary and subject to later verification.

(A)

#### a. Access to Ships

(1) During oil spill response emergencies, although not mandated by law, commanding officers and masters should allow Federal On-Scene Coordinator (FOSC) representatives access to their ships if requested, consistent with information security requirements. The U.S. Coast Guard

is designated the FOSC for oil spills in the coastal regions of the U.S.

(2) During non-emergency situations, Navy ships are not subject to inspection by Coast Guard, State, or local officials in connection with oil spill planning. Commanding officers shall cooperate, however, with the Coast Guard and civilian authorities regarding oil spill planning and prevention consistent with information security requirements without impeding mission accomplishment. Commanding officers, at their discretion, may invite Coast Guard, State, and local officials aboard their ships for assist visits or other discussions. They shall coordinate requests for such access with the cognizant Navy On-Scene Commander (NOSC) who in most cases is the Navy REC.

**b. Information Dissemination**

(1) Ships shall promptly and accurately respond to Federal, State, and local government requests for information necessary to coordinate spill response and cleanup efforts or to prevent or reduce environmental damage. Ship commanding officers providing initial information should indicate that the information provided is preliminary and is subject to verification or change during subsequent investigation.

(2) Ships should promptly respond to Federal, State, and local government requests for the following preliminary information about Navy oil spills:

- (a) Whether an oil spill has occurred
- (b) The specific source of the spill
- (c) The type of substance spilled
- (d) When the spill occurred
- (e) Where the spill occurred

(f) The initial indication as to the general nature of the cause of the incident, e.g., whether due to equipment failure, operator error, or undetermined origin

(g) A preliminary estimate of how much oil was spilled.

Commands providing preliminary information should indicate that the provided information is preliminary and is subject to verification or change during subsequent investigation. Ships receiving requests for investigation reports shall inform requestors that they will forward any Navy investigation reports generated in connection with the spill to the Office of the Judge Advocate General (OJAG). OJAG will control the release of investigation reports.

c. When claims by or against the Navy have been filed or are reasonably anticipated, requests for information pertaining to oil spills shall be referred to the Navy attorney representing the cognizant NOSC.

d. The commanding officer will refer any media requests for information to the public affairs officer on the cognizant NOSC staff.

**19-2.2.3.2 Environmental Inspector Access Procedures Within the U.S.** If a State or local inspector requests access to inspect a Navy ship, the parties involved shall follow these procedures:

- a. The commanding officer shall confirm the inspector's credentials.
- b. The inspector shall identify spaces or work sites to which he requests access.
- c. The inspector shall make known the nature of the activity to be examined and its relationship to regulations. The commanding officer should consult counsel if there is any question on the applicability of the law or regulation to ships.

d. If the issue is a result of contractor actions aboard ship, a representative of the contractor shall accompany the inspector and ship representative.

e. If practical, the ship shall suggest off-ship alternatives that involve similar operations or training demonstrations conducted ashore.

f. If off-ship alternatives are not practical, commanding officers shall approve inspections that do not involve access by inspectors to classified or restricted information, equipment, technology, or operations.

g. Shipboard air conditioning and refrigeration (AC&R) equipment designed or constructed to general or military specification (GENSPEC/MILSPEC) requirements on board Navy ships or vessels owned, operated, or bare-boat chartered by the Navy or COMSC are not subject to the requirements of U.S. EPA Clean Air Act regulations on refrigerants. Federal, State and local regulatory personnel have no authority to inspect Navy ships or ship records to enforce these requirements. If regulatory personnel request to board Navy ships for this purpose, do not grant access. Follow the procedures of paragraph 19-2.2.3.4 and notify CNO (N45) by routine message with information copies to the chain of command, should this occur.

**19-2.2.3.3 Environmental Inspector Security Clearances.** If the inspector requests access to sensitive areas such as spaces containing cryptographic equipment, sonar systems, or nuclear propulsion plant spaces (NNPS) or nuclear propulsion plant information (NNPI) and the commanding officer concludes that a legitimate requirement exists for such access, he/she shall forward a message request for access to CNO (N45) with information copies to the fleet commander in chief (CINC) and type commander, for spaces that would involve access to classified information or CNO (N00N) for NNPS/NNPI. The message shall identify the following:

a. The space to which the inspector wants access

b. The nature of the activity that the inspector wants to examine

c. The classified or restricted information, equipment, or operation to which the inspector would have access during the proposed inspection

d. The proposed alternatives which do not involve such access

e. Reasons why the inspector finds the proposed alternatives unsatisfactory

f. Security clearance information, including name of inspecting official(s), date of visit, name of agency which the official(s) represent, and level, basis, and date of security clearance.

(R)

The commanding officer shall inform State or local inspector(s) that the security implications of their request require consideration at Navy headquarters.

**19-2.2.3.4 Environmental Inspection Dispute Resolution.** If the commanding officer determines that the inspector does not have a requirement for access to the spaces or information cited above, but the inspector does not agree with that determination, the commanding officer shall promptly refer the matter up the chain of command for resolution by CNO (N45/N00N) as described above.

**19-2.2.4 Environmental Inspections of Navy Ships Outside the U.S.** Navy ships within the territory of foreign countries (internal waters, ports and seas out to 12 nm from land) are not legally subject to enforcement of environmental requirements by these coastal or port states or local authorities. However, they must operate in due regard for that nation's resource-related laws and regulations. Additionally, Navy ships must comply with any environmental regulations established in port visit clearances and the local Status of Forces Agreements (SOFAs).

Environmental officials representing the foreign country or local authority do not have the authority to inspect U.S. Navy ships to determine compliance with that country's laws. If a Navy ship is approached by representatives of a foreign country while in foreign waters with a request to inspect the ship regarding a possible environmental violation, the commanding officer shall refuse to permit the inspection and shall notify the U.S. embassy, CNO (N45/N00N) and the chain of command of the request, the alleged violation, and any amplifying information.

If the ship has violated or is perceived to be in violation of the foreign country's environmental laws or regulations, the country may request the ship to leave port or the ocean area under its jurisdiction. In this event, the commanding officer shall comply with the request and notify the U.S. embassy, CNO (N45), and the chain of command of this action.

**19-2.2.5 Notices of Violations.** Ships shall comply with the provisions of appendix B regarding notices of violation or other expressions of environmental regulatory concern.

#### **19-2.2.6 Afloat Environmental Compliance Inspections and Assessments**

a. The afloat environmental compliance inspection process shall consist of oversight Inspections by the Board of Inspection and Survey (INSURV). INSURV shall conduct environmental compliance oversight inspections for forces afloat as a part of the regular INSURV inspection process using appendix K. These inspections shall include equipment operation, program compliance and effectiveness, and training. The President, Board of Inspection and Survey (PRESINSURV) shall report the status of afloat environmental compliance and effectiveness and issues requiring CNO attention as a part of the periodic briefings to the CNO.

b. Since regular INSURV inspections occur every 5 years, immediate superiors in command

(ISICs) will schedule "intervening" environmental protection assessments. These "intervening" environmental protection assessments will be conducted inport during the inter-deployment training cycle (IDTC) by a small group of INSURV industrial hygiene officers and oil pollution abatement, marine sanitation device, and plastic waste processor equipment experts. The assessment (including training to improve program effectiveness) will take approximately 2 days with a letter report to the commanding officer only. INSURV will combine data collected during these "intervening" environmental protection assessments with that from final contract trials and underway material inspections in the INSURV database for use by type commanders, CNO (N45), NAVSAFECEN, and other environmental protection organizations. For ships not in a normal IDTC cycle, ISICs shall schedule an "intervening" environmental protection assessment at least every 36 months.

c. In the event that a commanding officer may want to evaluate his/her command's environmental compliance practices, the Afloat Environmental Checklist of appendix K will assist in this evaluation.

#### **19-2.2.7 Training**

a. All hands shall receive environmental training upon reporting aboard (I Division or School of the Boat) and annually thereafter. This training shall include:

(1) The Navy's commitment to environmental protection.

(2) The command environmental program. This training should include pollution prevention, solid waste handling and minimization, plastics management, recycling, air pollution (including ozone depleting substances (ODSs)) and oil and hazardous substance spill response.

(3) The member's responsibility with regard to this program. Ships may accomplish this training with videotapes for general subject matter

and by ship's instructors for command specific topics.

b. Watch officers responsible for authorizing the overboard disposal of shipboard wastes shall receive training on the prohibited zones for the discharge of shipboard wastes as a part of the qualification for the watch.

R) c. Personnel assigned as the Afloat Environmental Coordinator (AEPC), per paragraph 19-2.2.11, shall attend the Naval Occupational Safety and Health and Environmental Training Center (NAVOSHENVTRACEN) offered Afloat Environmental Protection Coordinator Course (A-4J-0021) or, if unable to attend this training, complete the Afloat Environmental Protection Coordinator interactive courseware (to be available in 1999). Training should be completed before assignment, if possible, otherwise within 6 months of assignment. The assigned AEPC shall also complete Watchstation 303, Environmental Protection Coordinator, in the Hazardous Material/Environmental Protection Programs Afloat Personnel Qualification Standard (PQS), NAVEDTRA 43528-A, within 6 months of assignment. For MSC ships, COMSC shall specify AEPC training requirements.

R) **19-2.2.8 Exclusion of Vessel Discharges from National Pollutant Discharge Elimination System (NPDES) Permitting**

a. Per regulations issued by the U.S. Environmental Protection Agency (EPA), discharges incidental to the normal operation of a vessel do not require a permit under the NPDES program. The following are examples of incidental discharges:

- (1) Effluent from properly functioning oil/water separators
- (2) Sewage (when discharge is necessary)
- (3) Graywater

(4) Cooling water

(5) Boiler and steam generator blow-down

(6) Weather deck runoff, including fresh water washdowns

(7) Ballast water

Naval vessels shall not enter into agreements with environmental agencies regarding ship discharges without CNO (N45) approval.

b. To promote uniformity in treatment of naval vessel discharges nationwide, CNO (N45) and fleet commanders closely monitor local attempts to impose requirements on ships beyond those specifically provided for by U.S. law or U.S. EPA regulation. Commanding officers or masters shall report any interest expressed by environmental regulators in discharges from U.S. Navy ships or COMSC public vessels, by message to CNO (N45) with information copies to the chain of command.

**19-2.2.9 Operation Within Foreign Nation Waters.** (R) Navy ships are not legally subject to enforcement of environmental requirements by coastal or port States. When operating in foreign territorial waters, or when visiting foreign ports, Navy ships shall abide by environmental provisions contained in port visit clearances and/or in status of forces agreements (SOFAs) (see figure 19.1). Such conditions will normally be communicated to visiting ships in the Port Guide or the Logistics Request (LOGREQ) reply. The U.S. Government has agreed to these conditions in advance. Navy ship compliance with such requirements is in no way an inappropriate relinquishment of U.S. sovereignty. When port visit clearances and SOFAs either do not exist, or do not



# SUMMARY OF NAVY POLLUTION CONTROL DISCHARGE RESTRICTIONS

AREA	SEWAGE ("BLACK WATER")	GRAYWATER	OILY WASTE
U.S. Internal Waters & Territorial Seas (0-3 nm)	No discharge.	If equipped to collect graywater in CHT system or dedicated graywater system, collect and pump to shore only when pier-side. If no collection capability exists, direct discharge permitted.	No sheen. If equipped with OCM, discharge <15 ppm oil. (1)
U.S. Contiguous Zone (3-12 nm)	Direct discharge permitted.	Direct discharge permitted.	No sheen. If equipped with OCM, discharge <15 ppm oil.(1)
12-25 nm	Direct discharge permitted.	Direct discharge permitted.	If equipped with OCM, discharge <15 ppm oil. Ships with OWS or BWPT but no OCM must process all machinery space bilge water through OWS or BWPT. (2) (3)
>25 nm	Direct discharge permitted.	Direct discharge permitted.	Same as 12-25 nm. (2) (3)
>50 nm & High Seas	Direct discharge permitted.	Direct discharge permitted.	Same as 12-25 nm. (2) (3)
MARPOL "Special Areas" In Effect	Direct discharge permitted.	Direct discharge permitted.	Refrain from discharging any oil or oily waste to the extent practicable without endangering ship or impairing operations. Bilge water, same as 12-25 nm. (2) (3)
Foreign Countries	Within foreign territorial seas (12 nm), see Visit Clearance or SOFA (as delineated in the Port Guide or LOGREQ reply). If sufficient guidance not available, no discharges within 3 nm when sewage reception facilities available. If not feasible, follow standards observed by host nation warships.	Within foreign territorial seas (12 nm), see Visit Clearance or SOFA (as delineated in the Port Guide or LOGREQ reply). If sufficient guidance not available, follow guidance above. If not feasible, follow standards observed by host nation warships.	Within foreign territorial seas (12 nm), see Visit Clearance or SOFA (as delineated in the Port Guide or LOGREQ reply). If sufficient guidance not available, follow guidance above. If not feasible, follow standards observed by host nation warships. (3)
Comments	Direct discharge allowed within 3 nm under emergency conditions.	The collection of graywater inside 3 nm from shore and prior to pierside may significantly reduce tank capacity and might result in the unnecessary overboard discharge of sewage before reaching pier facilities or unrestricted waters.	State/local rules may vary; check SOPA regulations.  Submarines without BWPTs: After allowing adequate separation time, pump non-oily, water phase outside 50 nm, or as far from shore as practicable if the operations or operational capabilities of the submarine would be impaired by this requirement.

## Notes:

OWS - Oil/Water Separator

OCM - Oil Content Monitor

WOCT - Waste Oil Collecting Tank

SOPA - Senior Officer Present Afloat

BWPT - Bilge Water Processing Tank

(1) If operating properly, OWS or BWPT discharge will routinely be less than 15 ppm.

(2) Surface ships without operable OWS must retain oily waste for shore disposal. If operating conditions require at-sea disposal, minimal discharge is permitted beyond 50 nm from nearest land.

(3) If equipped with OWS and OCM and operating conditions prevent achieving <15 ppm, limit discharges to <100 ppm.

Figure 19.1

SUMMARY OF NAVY POLLUTION CONTROL DISCHARGE RESTRICTIONS (Continued)

AREA	GARBAGE (NON-PLASTICS)	GARBAGE (PLASTICS) (NON-FOOD CONTAMINATED) (6)	GARBAGE (PLASTICS) (FOOD-CONTAMINATED) (6)
U.S. Internal Waters & Terri- torial Seas (0-3 nm)	No discharge.	No discharge.	No discharge.
U.S. Contiguous Zone (3-12 nm)	Pulped or comminuted food and pulped paper and cardboard waste may be dis- charged >3nm.	No discharge.	No discharge.
12-25 nm	Bagged shredded glass and metal waste may be discharged >12nm. Submarines see note (4).	No discharge.	No discharge.
>25 nm	Direct discharge permitted. See note (5).	No discharge.	No discharge.
>50 nm & High Seas	Direct discharge permitted. See note (5).	No discharge.	No discharge.
MARPOL "Special Areas" In Effect	Discharge pulped or comminuted food and pulped paper and cardboard waste >3 nm. Discharge bagged shredded glass and metal waste >12nm. (5) <b>Report all non-food, non-pulped, non- shredded garbage discharges to CNO (N45) upon completion of operations.</b>	No discharge.	No discharge.
Foreign Countries	Discharge pulped or comminuted food and pulped paper and cardboard waste >3 nm from foreign coasts. Discharge bagged shredded glass and metal waste >12nm. Discharge all other garbage >25 nm.	No discharge.	No discharge
Comments	Garbage discharged should be processed to eliminate floating marine debris. Re- tain surplus material for shore disposal.	Record-keeping requirements exist for at-sea discharge. Minimal discharge authorized if plastic processor inoper- able and necessary for safety of ship/ health of crew. Report discharge com- mencement to appropriate operational commander.	Record-keeping requirements exist for at-sea discharge. Minimal discharge authorized if plastic processor inoper- able and necessary for safety of ship/ health of crew. Report discharge commencement to appropriate opera- tional commander.

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**Notes:**

- (4) Submarines may discharge compacted, sinkable garbage between 12 nm and 25 nm provided that the depth of water is greater than 1,000 fathoms.
- (5) If equipped, use pulpers and shredders for all discharges of food products, paper, cardboard, glass and metal wastes. Shredded metal and glass must be bagged prior to disposal
- (6) Submarines are required to discharge only the minimum amount practicable.

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Figure 19.1 (Continued)

SUMMARY OF NAVY POLLUTION CONTROL DISCHARGE RESTRICTIONS (Continued)

AREA	HAZARDOUS MATERIALS	MEDICAL WASTES (INFECTIOUS & SHARPS)
U.S. Internal Waters & Territorial Seas (0-3 nm)	No discharge.	Steam sterilize, store, and transfer ashore. No discharges.
U.S. Contiguous Zone (3-12 nm)	No discharge.	Steam sterilize, store, and transfer ashore. No discharges.
12-25 nm	No discharge except as permitted by appendix L.	Steam sterilize, store, and transfer ashore. No discharges.
>25 nm	No discharge except as permitted by appendix L.	Steam sterilize, store, and transfer ashore. No discharges.
>50 nm & High Seas	No discharge unless >200 or as permitted by appendix L.	If health and safety are threatened, steam sterilize waste, package and weight for negative buoyancy, log, and discharge. No discharge of sharps permitted.
MARPOL "Special Areas" In Effect	No discharge except as permitted by appendix L.	Steam sterilize, store, and transfer ashore. No discharges. If >50 nm and health and safety are threatened, steam sterilize waste, package and weight for negative buoyancy, log, and discharge. No discharge of sharps permitted.
Foreign Countries	No discharge except as permitted by appendix L.	The packaging, handling, storage, transport, treatment, and disposal of infectious waste shall be as prescribed by applicable visit clearance, SOPA regulations, and port guides
Comments		Dispose of all sharps ashore. Do not incinerate plastic, wet materials. Steam sterilization requirement not applicable to submarines. Other non-infectious waste may be disposed of as garbage and does not require steam sterilization.

Figure 19.1 (Continued)

provide sufficient guidance, Navy ships should attempt to abide by the corresponding requirement for U.S. navigable waters or ports, as delineated in this chapter. In some cases, compliance with the corresponding U.S. requirement will not be feasible overseas, due to lack of offload facilities, environmental services, or some other cause. Where compliance with U.S. requirements is not feasible, Navy ships should operate in a manner consistent with the environmental practices of host nation warships.

**19-2.2.10 Prohibited Discharge Zones for U.S. Navy Shipboard Wastes.** Figure 19.1 provides a summary of pollution control discharge restrictions for ships.

**19-2.2.11 Afloat Environmental Protection Coordinator.** Commanding officers of ships shall designate a person as the AEPC. The person assigned to this position shall be the commanding officer's advisor on the shipboard environmental protection program. This person shall be knowledgeable regarding the requirements and responsibilities of this chapter and trained per the requirements of paragraph 19-2.2.7c.

- A) **19-2.2.12 Environmental Planning.** While carrying out assigned missions, operational commanders and commanding officers have an obligation to avoid unnecessary damage to the environment. Toward that end, commanders must closely observe laws, regulations, and policy for protecting and preserving the environment in all naval operations. Failure to consider environmental requirements or effects early in the planning process could result in operational delays. Early environmental protection actions or mitigating measures should result in minimal or no limitations or impacts on exercise objectives. Environmental planning must be meticulous to achieve compliance, avoid unnecessary environmental degradation, and maintain public support for the continued use of operating areas. Environmental planning may lead to modifying operational objectives to achieve most if not all goals, selecting more favorable operating areas, and establishing environmental "rules of engage-

ment" that will result in operational success while achieving environmental protection.

The Navy developed Naval Warfare Publication (NWP) 4-11, *Environmental Protection* (reference (a)), to provide commanders and their planning staffs with doctrine to accomplish assigned missions while achieving the highest possible degree of environmental protection and compliance. To support environmental planning, commanders shall develop an Environmental Annex for each operational plan or order.

Reference (a) discusses the environmental planning process for peacetime and military operations other than war (MOOTW) in detail. It also contains guidance for developing the Environmental Annex. Chapter 2 and appendix E provides detailed information on compliance with the requirements of the National Environmental Policy Act (NEPA) and Executive Order 12114 for overseas environmental planning.

## **19-3 Sewage**

**19-3.1 Legislation (This section contains background material from which Navy policy is derived).** The Clean Water Act (CWA) authorizes DOD to issue regulations governing the design, construction, installation and operation of marine sanitation devices (MSDs) on board vessels owned and operated by DOD.

## **19-3.2 Terms and Definitions**

**19-3.2.1 Graywater.** Discarded water from deck drains, lavatories, showers, dishwashers, and laundries, as well as discarded water from shipboard medical facilities. Does not include industrial wastes, infectious wastes and human body wastes. (R)

**19-3.2.2 Graywater Collection and Transfer System.** An independent, auxiliary graywater collection and transfer system designed to collect graywater and pump the waste to shore facilities in port or direct water overboard at sea. Graywater collection and transfer systems are typically in- (A)

stalled on ships with Type III-A marine sanitation devices (MSDs) that may lack the capability to collect and transfer graywater.

**19-3.2.3 Industrial Wastewater.** Wastewater or semi-solid material generated in shipboard processes such as manufacturing, production and maintenance (for example, metal plating, acid cleaning, photo processing, solvent cleaning and painting materials).

**19-3.2.4 Marine Sanitation Device (MSD).** Any equipment on board a ship or craft designed to receive and treat sewage to a level acceptable for overboard discharge, or which receives or retains sewage on board for later discharge ashore or in waters where discharge is permissible. Within the generic term MSD, the Navy uses the following terms to identify general types:

a. **Type I:** "Flow-through" and "discharge" device designed to receive and treat sewage aboard ship and produce an overboard effluent with a fecal coliform count of not more than 1,000 per 100 milliliters and no visible floating solids.

b. **Type II:** "Flow-through" and "discharge" device that produces an overboard effluent with a fecal coliform count of not more than 200 per 100 milliliters and total suspended solids of not more than 150 milligrams per liter.

c. **Type III-A:** "Non-flow-through" device designed to collect shipboard sewage by means of vacuum or other reduced-flush systems and to hold the sewage while transiting navigable waters (0-3 nm). This type may include equipment for shipboard evaporation or incineration of collected sewage.

d. **Type III-B:** Collection, holding and transfer (CHT) system designed to collect both sewage and graywater while in port; to offload sewage and graywater to suitable shore receiving facilities; to hold sewage while transiting within 0-3 nm; and to discharge both sewage and graywater overboard while operating beyond 3 nm.

**19-3.2.5 Sewage.** Human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes.

### **19-3.3 Navy Policy**

**19-3.3.1 Compliance with Regulations.** To ensure compliance with regulations regarding sewage and graywater:

a. The Navy shall equip ships with MSDs designed to prevent the discharge of untreated or inadequately treated sewage, or of any waste derived from sewage (e.g., sludge), within 0-3 nm of the U.S. Ships unable to collect and transfer graywater to shore while pierside via the installed MSD shall be equipped with graywater collection and transfer systems as soon as possible. (R)

b. All new ships, except for public vessels operated under the direction of COMSC where specifically excluded by Top Level Requirements, shall be equipped only with Type III MSDs certified by COMNAVSEASYSCOM. Type III-A MSDs shall have an auxiliary system capable of collecting and transferring to shore all shipboard graywater generated while pierside. (R)

c. Existing ships equipped with Type I or Type II MSDs installed on or before 1 April 1979 are in compliance so long as the device remains satisfactorily operable.

d. Existing ships with installed toilet facilities, but not equipped with Type I or Type II MSDs installed before 1 April 1979 shall be equipped with Type III MSDs certified by COMNAVSEASYSCOM. Public vessels operated under the direction of COMSC shall be equipped with USCG-approved Type II MSDs. Type I or Type II MSDs that become inoperable and require removal shall be replaced with certified Type III MSDs (MSC vessels shall replace inoperable MSDs with USCG-approved Type II MSDs).

Figure 19.2

**Standard Dimensions of Flanges  
for Discharge Connections**

Description	Dimension
Outside diameter	210 mm
Inner diameter (1)	According to pipe outside diameter
Bolt circle diameter	170 mm
Slots in flange	4 holes 18 mm in diameter equidistantly placed on a bolt circle of the above diameter, slotted to the flange periphery. The slot width to be 18 mm.
Flange thickness	16 mm
Bolts and nuts: quantity and diameter	4, each of 16 mm diameter and of suitable length

The flange is designed to accept pipes up to a maximum internal diameter of 100 mm and shall be of steel or other equivalent material having a flat face. This flange, together with a suitable gasket, shall be suitable for a service pressure of 6 kg/cm<sup>2</sup>.

(1) For ships having a molded depth of 5 m or less, the inner diameter of the discharge connection may be 38 mm.

e. MSD installations shall include the capability for pumping collected sewage and graywater to appropriate shoreside reception facilities. Surface ships, submarines and service craft/boats shall be fitted with cam-lock sewage discharge connections in 4-inch (MS 27025-18), 2-1/2-inch (MS 27025-14) and 1-1/2-inch (MS 27025-10) sizes, respectively. Such fittings shall allow quick connect/disconnect with shoreside offloading hoses.

f. Navy ships visiting foreign ports shall be equipped with adapters to accommodate hoses having international-standard flanges specified by

the International Maritime Organization in Annex IV, Regulation 11 of the International Convention on the Prevention of Pollution from Ships (MARPOL). Figure 19.2 provides specifications for such adapters.

g. Ships shall not dispose of industrial wastewater through ships' sewage or graywater collection and transfer systems. Following use, ships shall deliver shipboard industrial wastewater to a shore activity for processing to determine if it has further use and, if not, disposal as waste.

**19-3.3.2 Shipboard Procedures.** Ships shall operate MSDs following these procedures:

a. Ships shall properly operate and maintain MSDs installed aboard Navy ships to prevent the overboard discharge of untreated or inadequately treated sewage, or any waste derived from sewage (e.g., sludge), within 0-3 nm of the U.S. shore.

b. MSDs aboard Navy ships shall collect only sewage while operating or transiting within 3 nm of shore. The collection of graywater would significantly reduce tank-holding capacity and might result in the unnecessary overboard discharge of sewage before reaching pier facilities or unrestricted waters.

c. If equipped, ships shall collect graywater in installed MSDs or graywater collection systems while in port. If not yet equipped to collect graywater, ships may directly discharge it overboard while in port.

d. Navy ships shall not discharge any treated or untreated sewage into freshwater lakes (excluding the Great Lakes), freshwater reservoirs or other freshwater impoundments, or into rivers not capable of interstate navigation. Navy ships that operate in such waters shall be modified to preclude accidental discharge.

e. While operating beyond 3 nm from shore, Navy ships may discharge all sewage and graywater directly overboard. Vessels equipped with a

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USCG-approved Type I or II MSD shall treat all sewage prior to discharge.

- R) f. Ships shall not dispose of used solvents or other industrial wastes to MSDs or graywater collection systems or dump them down sinks or deck drains. They shall containerize used solvents and industrial wastes for disposal ashore.

g. COMSC ships equipped with USCG-approved Type II MSDs may discharge via installed MSD.

**19-3.3.3 Ship-to-Shore Transfer.** Navy ships shall follow these procedures in port:

a. While visiting Navy ports, Navy ships equipped with Type III-A and Type III-B MSDs shall periodically pump their collected sewage and graywater to shoreside reception facilities. The shore activity shall provide the transfer hoses and associated fittings to connect the ship discharge line with the shore equipment.

b. While visiting non-Navy ports, Navy ships shall request sewage reception facilities in LOGREQs or other pertinent documentation. Ships shall use pier sewers when available. If sewers are not available, ships shall use other sewage collection facilities such as barges or tank trucks unless it is impractical to do so.

- A) c. When in port, food service garbage grinders shall be diverted to the MSD system for discharge ashore.

**19-3.3.4 Exceptions.** Navy ships may discharge minimal quantities of sewage within 0-3 nm of shore, but only under certain circumstances and with due consideration for environmental effects. Because certain State or local water quality authorities may require notification of sewage or graywater discharges, ships shall coordinate reporting requirements through fleet and port environmental coordinators. Ships may discharge sewage overboard within 3 nm of shore only under the following conditions:

a. The ship's holding capacity is insufficient because transit time through the zone 0-3 nm from shore is of long time duration. The ship shall minimize any necessary sewage discharge and shall pump out as far as possible from land.

b. The ship is conducting or participating in military operations or exercises (including training or readiness evolutions) within the zone 0-3 nm from shore, and terminating operations to offload sewage pierside or beyond 3 nm from shore would impair operational effectiveness or the mission.

c. The ship is at anchor or moored where sewage reception facilities or services are not reasonably available, or where use of such services or facilities is not feasible because of foul weather, poor visibility, or unsafe environmental conditions, and where on board retention of sewage is not practicable.

d. The ship's MSD is inoperable because of equipment malfunction or maintenance, its use would interfere with an overhaul or repair effort, or its use would pose a hazard to the health or welfare of the crew. Ships shall minimize those periods prompting use of this exemption.

Ships shall discharge any sewage underway under this section as far as possible from shore. If in port, the ship shall obtain the concurrence of the shore activity environmental manager before the overboard discharge of sewage.

**19-3.4 Training.** Ships shall train personnel who operate or maintain sewage and graywater disposal or transfer equipment on the proper procedures for sewage or graywater disposal, including hookup and transfer of sewage or graywater to shore facilities and at sea discharge restrictions. Personnel assigned to supervise sewage or graywater disposal operations shall complete the Shipboard Sewage Collection, Holding, and Transfer (CHT) course, K-652-2141, prior to assuming these duties. All personnel who operate or maintain sewage or graywater disposal equipment shall

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complete the Shipboard Sewage Collection, Holding, Transfer (CHT), and Treatment PQS, NAVEDTRA 43199-C, prior to assignment to those duties.

## **19-4 Air**

### **19-4.1 Legislation (This section contains background material from which Navy policy is derived).**

a. The Clean Air Act (CAA) authorizes State and local governments to set standards for emissions of air pollutants. Federal law requires Federal agencies to comply with Federal, State, interstate and local air pollution requirements. Although most air pollution regulations address shoreside sources, Navy ships operating within U.S. and State waters may also be subject to certain regulation.

R) b. Reference (b) (NESHAP for Shipbuilding and Ship Repair) considers ship's force coating operations as an EPA-regulated activity when a ship is pier side at an affected source. "Affected source" is an EPA determination and, therefore, affects both Navy shore activities (shipyards and naval stations) and private ship repair facilities. The shore activity is required to include information about marine coating use by ship's force in their semi-annual reports.

For ships at affected source sites, reference (b) imposes recordkeeping requirements, prescribes use of certain types of paint, and restricts use of paint thinners.

Despite the applicability of the requirement, EPA headquarters has recommended that regional EPA offices grant waivers to relieve Navy activities classified as affected source sites of the requirement to record and report ships' force marine coating use on "operational ships" (all ships other than those in an overhaul availability). Overhaul is a depot level maintenance availability that occurs at Navy or commercial shipyards. EPA will not automatically grant waivers. The Navy must apply to EPA regional offices to obtain them. Therefore, recordkeeping and reporting requirements will be administered and enforced on a variable basis by EPA regions and state environmental agencies.

### **19-4.2 Terms and Definitions**

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**19-4.2.1 Affected Source.** A major source of Hazardous Air Pollutants (HAPs) that emits more than 25 tons/year of HAPs aggregate or more than 10 tons/year of any single HAP and uses at least 264 gallons of marine coating per year.

**19-4.2.2 Coating.** Any material that can be applied as a thin layer to a substrate and which cures to form a continuous solid film. Coatings include paints, primers, varnishes, lacquers, etc. Marine coatings meeting this definition are regulated under reference (b).

**19-4.2.3 Domestic.** Within the United States, its possessions, and territories.

**19-4.2.4 General Use Coating.** Any coating that is not a specialty coating. Marine coatings meeting this definition are regulated under reference (b).

**19-4.2.5 Volatile Organic Compounds (VOCs).** Photochemically reactive organic compounds that evaporate readily under normal temperature and pressure conditions. As a result of the tendency to evaporate readily, VOCs are primary contributors to the formation of ground level ozone.



### 19-4.3 Navy Policy

**19-4.3.1 Compliance with Regulations.** Navy ships shall comply with applicable Federal, State and local regulations governing air pollution emissions.

**19-4.3.2 Shipboard Procedures.** Ships shall follow these procedures:

a. Navy ships at pierside shall implement operation and maintenance procedures to prevent stack emissions in violation of State and local regulations. Specifically, Navy ships shall comply with regulations on the opacity of smoke during normal operation of boilers and special periods, such as lighting off, securing, baking out, or testing of boilers.

b. In port, Navy ships shall minimize operation of boilers and diesel engines by using shore-provided "hotel" services whenever operational requirements permit. Ships shall limit blowing of boiler tubes in port to the minimum necessary to conform with provisions of reference (c), chapter 221.

c. Ships shall use only approved solvents, paints, fuels, lubricants and chemicals on board. Reference (d) includes a list of materials prohibited on ships. The Ships Hazardous Material List (SHML) or the Submarine Material Control List (SMCL) contains nomenclature of HM approved for use aboard ship. For submarines, additional restrictions may apply to solvents, paints, fuels, lubricants and other chemicals per the Nuclear Powered Submarine Atmosphere Control Manual (S-9510-AB-ATM-010/(U)).

d. Only properly trained personnel equipped with appropriate personal protective equipment shall perform shipboard emergency or operational readiness repairs on thermal insulation containing asbestos. See reference (d), chapter B1 for guidance. This reference also discusses other asbestos work, including the removal of asbestos-containing deck tiles, replacement of asbestos-containing gas-

ket/packing material and preventive maintenance on asbestos-containing brake assemblies. Ships shall properly containerize any asbestos material removed during shipboard repair actions performed by ship's force and dispose of it without release of asbestos fibers into the environment (see reference (d), chapter B1). In preparation for disposal ashore, repair personnel must adequately wet asbestos residue before double bagging it in heavy-duty (6 mil thickness) plastic bags or other suitable impermeable containers. Repair personnel shall provide standard asbestos danger labels on all bags or containers containing asbestos material. Other applicable laws, regulations and contract requirements govern asbestos removal by Navy shore facilities or contractors.

e. Navy and COMSC ships with AC&R systems with an installed refrigerant charge of more than 50 pounds that contain ODSs such as CFC-11, CFC-12, or CFC-114 or ODS substitute material such as HFC-134a or HFC-236fa shall meet the following annual performance goals:

(1) Maintain maximum annual leakage rate of no more than 15 percent of total installed refrigerant charge of air conditioning equipment.

(2) Maintain maximum annual leakage rate of no more than 35 percent of total installed refrigerant charge of ship stores and cargo refrigeration.

f. Ships shall recover ODSs prior to maintenance on air conditioning and refrigeration systems and fire protection systems. Navy personnel shall not intentionally release chlorofluorocarbons (CFCs) or halons during the servicing, maintenance, repair and disposal of any AC&R or fire-fighting equipment. Only maintenance personnel trained per paragraph 19-4.3.3 shall perform maintenance on equipment containing such substances. Under these procedures, maintenance personnel shall use only approved procedures for minimizing loss of ODSs, regardless of the ship's location.

g. Navy personnel who perform maintenance on shipboard AC&R systems shall keep records of maintenance actions, names of technicians performing work, pounds of refrigerant removed and pounds of refrigerant added. Ships shall keep records to calculate annual equipment leakage rates addressed in paragraph 19-4.3.2e and retain them for 3 years.

h. Ships shall restrict the use of ODS-containing solvents for shipboard equipment to those procedures specifically required.

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i. **ODS Reserve.** The Navy established the ODS reserve to support mission-critical ODS requirements. Shipboard CFC for use in air conditioning and refrigeration systems and halon for use in firefighting systems are mission-critical-designated. The ODS reserve material is set aside for these shipboard systems. Navy ODS Advisory 96-01 (series), produced by NAVSEASYS-COM (SEA 03L) provides procedures for deposits to and requisitions from the reserve. CNO (N45), COMNAVSEASYS-COM, COMNAV-AIRSYSCOM, COMSC and Fleet CINCs monitor requisitions from the ODS reserve.

j. **Shipboard Galley Equipment.** Class I ODS refrigerants used in shipboard galley equipment were phased out of production on 31 December 1995. Existing supplies are limited. Ships shall replace existing equipment with new equipment when it is no longer usable or repairable. Replacement equipment must be EPA-approved (complying with their significant new alternatives policy (SNAP) program) and must use a refrigerant with an ozone depletion potential (ODP) of 0.05 or less. Replacement equipment must also meet safety and health criteria. NAVSEA Catalog S6161-Q5-CAT-010 lists replacement equipment. Ships are authorized to use material from the ODS reserve to support galley equipment until the year 2005. After that date, ships will satisfy any remaining material requirements through local sources.

k. **Shipboard Marine Coating Use**

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(1) Since the EPA does not consider all shore activities to be "affected sources", Navy activities and SUPSHIPS shall notify ships of their reporting responsibilities prior to entering the activity. Fleet CINCs shall direct Navy activities, at affected sources, to work with the RECs to request record-keeping waivers from EPA regional offices for ships in "operational status".

(2) Ships in an overhaul availability at Navy NESHAP affected source sites shall maintain records of ships' force marine coating use *for coatings distributed from ships' stores*. The installed Hazardous Material Inventory Control System (HICS) may be used to keep these records. If regional EPA offices grant appropriate waivers, operational ships located at Navy affected sources sites will *not* be required to maintain records of ship's force marine coating use. Ships' force, however, shall record and report coating use when located at commercial affected source sites (e.g., private shipyards and maintenance facilities) regardless of availability type or operational status.

(3) Ship Recordkeeping and Reporting Requirements. When requested by the Navy activity or SUPSHIP, ships must record and report marine coating used each day. Records shall include the following information: (the Hazardous Material Inventory Control System (HICS) may be used to track this information.)

(a) Coating Type (e.g. general use, non-skid, special marking, etc.)

(b) Color

(c) National Stock Number (NSN)

(d) Manufacturer Name and/or Commercial and Government entity (CAGE) code

(e) Manufacturer product name

(f) Manufacturer part number

- (g) Volume of coating used
- (h) VOC content of coating
- (i) Coating certification (when available)
- (j) Date used.

Records shall be provided by the seventh day of the month for the previous month, and/or prior to departure.

Figure 19.3

<b>Application</b>	<b>EPA VOC Limit (Metric)</b>	<b>Conversion (U.S.)</b>
Air Flask	(340 g/l)	(2.53 lbs/gal)
Antenna	(530 g/l)	(4.42 lbs/gal)
Antifoulant	(400 g/l)	(3.33 lbs/gal)
Heat Resistant	(420 g/l)	(3.33 lbs/gal)
High Gloss	(420 g/l)	(3.50 lbs/gal)
High-Temperature	(500 g/l)	(4.17 lbs/gal)
Inorganic Zinc		
High-Build Primer	(340 g/l)	(2.53 lbs/gal)
Military Exterior	(340 g/l)	(2.83 lbs/gal)
Mist	(610 g/l)	(5.08 lbs/gal)
Navigational Aids	(550 g/l)	(4.50 lbs/gal)
Nonskid	(340 g/l)	(2.83 lbs/gal)
Nuclear	(420 g/l)	(3.50 lbs/gal)
Organic Zinc	(360 g/l)	(3.00 lbs/gal)
Pre-Treatment Wash		
Primer	(780 g/l)	(6.50 lbs/gal)
Repair and Maintenance		
of Thermoplastic Coating	(550 g/l)	(4.58 lbs/gal)
Rubber Camouflage	(340 g/l)	(2.83 lbs/gal)
Sealant Coat For Thermal		
Spray Aluminum	(610 g/l)	(5.08 lbs/gal)
Special Marking	(490 g/l)	(4.08 lbs/gal)
Specialty Interior	(340 g/l)	(2.83 lbs/gal)
Tack Coat	(610 g/l)	(5.08 lbs/gal)
Undersea Weapons		
Systems	(340 g/l)	(2.83 lbs/gal)
Weld-Through Shop		
Primer	(650 g/l)	(5.42 lbs/gal)
*General Use	(340 g/l)	(2.83 lbs/gal)

\*General use coating is defined as "any coating not defined as a specialty coating".

(4) **Restrictions on Marine Coating Use.**  
Ships are responsible for not using materials exceeding permissible volatile organic compound (VOC) limits for applications as listed in figure 19-3. (This information is on the paint can.) If

ship's force cannot obtain materials meeting these standards through the Navy supply system, they should contact COMNAVSEASYSKOM (SEA03M) for a compliant substitute.

(5) **Restrictions on Use of Thinners.**  
Ship's forces are prohibited from thinning marine coatings with anything except water. Ships shall label paint lockers with a placard stating, "Thinning of marine coatings/paints is prohibited."

(6) **Marine Coating Certification.** Infrequently, ships and shore activities may direct purchase select marine coatings from the domestic open market (commercially) due to mission necessity. Marine coatings bought on the domestic open market shall meet reference (c), chapter 631 VOC content standards and certification criteria.

(7) Ships shall implement the following marine coating work practices: (a) minimize spills of marine coatings, (b) insure marine coating containers are intact and leak-free and (c) insure marine coating containers are closed when not in use.

### 19-4.3.3 Training

a. Ships shall train personnel whose watch duties may result in air pollution (for example, diesel engine operators, boilermen, or gas turbine operators) in the minimization of air pollution as a part of their watch qualification.

b. Ships shall train personnel whose task assignments may result in air pollution (for example, topside painters or users of volatile solvents) on the proper use of the material prior to performing the task, to minimize the release of pollutants.

c. All Navy AC&R technicians who perform maintenance on air conditioning and refrigeration equipment shall attend EPA certified training on handling, recovery and recycling ODS. Ships shall provide these personnel with training on ODS regulations as well as spent/recyclable ODS labeling prior to assigning them to perform these duties.

d. Ships shall train personnel who work with other ODSs (e.g., halons and solvents) or perform maintenance on equipment containing such substances on methods to prevent release prior to assigning them to such work.

e. Personnel assigned to operate the incinerator shall complete the Incinerator Operator PQS, NAVEDTRA 43558, prior to assignment.

## 19-5 Oil and Oily Waste

### 19-5.1 International Convention and Legislation

R) **19-5.1.1** Annex I of **MARPOL** addresses oil pollution from ships at sea. Annex I establishes "special areas" in which all discharge of oil or oily mixture from oil tankers and other ships in excess of 400 gross tons is prohibited. This prohibition does not apply to the discharge of processed bilge water from machinery spaces provided all of the following conditions are met:

- a. The ship is proceeding en route.
- b. The oil content of the overboard discharge without dilution does not exceed 15 parts per million (ppm).
- c. The ship has in operation oil filtering equipment that will alarm if an output of greater than 15 ppm is exceeded (ships greater than 10,000 tons).
- d. The filtering system is equipped with a stopping device that will ensure that the discharge is automatically stopped if the effluent oil content exceeds 15 ppm.

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Annex I special areas in effect include the Mediterranean Sea, the Baltic Sea, the Black Sea, and the Antarctic area. Annex I limits the oil content of discharges from ships into all other ocean areas of the world at 15 ppm. Annex I requirements do not apply strictly to warships, but party

states (including the U.S.) are required to establish standards for their warships that require such vessels to conform as closely as practicable with the international standard, without compromising operational effectiveness.

**19-5.1.2** The Act to Prevent Pollution from Ships (APPS) implements the stringent oil and oily waste discharge requirements of Annex I of MARPOL. Although public vessels are not strictly subject to MARPOL Annex I, the Act requires heads of Federal departments to prescribe standards for ships under their authority that are consistent with those of the MARPOL Protocol "so far as it is reasonable and practicable without impairing the operations or operational capabilities of such ships." APPS applies to U.S. vessels worldwide.

**19-5.1.3** The Clean Water Act prohibits the discharge of oil in a harmful quantity into all waters within 12 nm of the U.S. coast. U.S. EPA regulation provides that a discharge of oil in a harmful quantity is one that violates applicable water quality standards or causes a sheen on the water. The oil content within a discharge that is sufficient to cause a sheen varies with type of oil, sea state, lighting, and viewing angle. In general, in excess of 15 to 20 ppm of oil may be sufficient to cause a sheen.

### 19-5.2 Terms and Definitions

**19-5.2.1 Bilge Water.** A mix consisting primarily of water, with some oil (normally less than 5 percent) and other unspecified substances, resulting from the normal operation of a vessel. Bilge water is considered an oily waste. Under normal circumstances, bilge water does not contain HM or other constituents that would classify it as a hazardous waste.

**19-5.2.2 Oil.** For the purposes of compliance with MARPOL and the Act to Prevent Pollution from Ships, the term "oil" refers to any petroleum-based fluid or semisolid, including crude oil, liquid fuels (like gasoline, kerosene, diesel), lubricating oil, waste oil, oil sludge and oil refuse. Oil also includes synthetic-based lubricating and transmis-

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sion products. MARPOL, Annex II classifies non-petroleum-based oils, such as vegetable oils, as noxious liquid substances.

For the purposes of Clean Water Act compliance, the term “oil” refers to oil of any kind or in any form, including petroleum, fuel oil, sludge, oil refuse, vegetable oil, and oil mixed with waste other than dredge spoils.

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**19-5.2.3 Oily Rags.** Cleaning rags or other sorbents contaminated with oil as defined in paragraph 19-5.2.2. Does not include sorbents contaminated with vegetable oils, liquid or solid shortening, or animal fat/lard used in food preparation.

**19-5.2.4 Oily Waste.** Oil mixed with water or other fluids such that the mixture is no longer useful.

**19-5.2.5 Reclamation.** The processing of used oil to recover useful oil products.

**19-5.2.6 Sheen.** An iridescent appearance on the surface of the water.

**19-5.2.7 Used Oil.** Oil whose characteristics have changed since being originally refined but which may be suitable for future use and is economically reclaimable. Used oil excludes synthetic-based lubricating and transmission products.

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**19-5.2.8 Waste Oil.** Oil whose characteristics have changed markedly since being originally refined and has become unsuitable for further use, and is not considered economically recyclable.

**19-5.3 Requirements.** Chapter 9, Oil Management Ashore, requires shore activities to develop an Oily Waste/Waste Oil (OW/WO) Management Plan. These plans are required to include activity-specific policies for collecting, treating, and disposing of bilge water from naval vessels and other shipboard and shoreside oily wastes. These plans are required to be consistent with the policy set forth in this section. They will address the management of shipboard OW/WO from ships where

oil/water separators (OWSs) and oil content monitors (OCMs) are either not installed or installed, but not operational. Although the format of the plan is not specified, it may be in the form of an activity or naval base directive with which ships will be required to comply.

#### 19-5.4 Navy Policy

##### NOTE:

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When seeking to comply with international and US oil discharge regulations, commanding officers should be aware that the definition of oil may not be consistent worldwide. For example, a discharge of vegetable oil that causes a sheen, while not a violation of MARPOL Annex I, is a violation of the U.S. Clean Water Act.

**19-5.4.1 Clean Water Act Compliance.** In compliance with the Clean Water Act, no discharge that produces a sheen is permitted within the territorial sea and contiguous zone of the U.S.

**19-5.4.2 APPS Compliance.** Ships operating in MARPOL Annex I special areas (Mediterranean Sea, Black Sea, Baltic Sea, and the Antarctic area) shall refrain from discharging any oil or oily waste to the extent practicable without endangering the ship or impairing its operations or operational effectiveness. Oil and oily waste discharges that are necessary in Annex I special areas or elsewhere on the high seas shall comply with the requirements listed below. Refer to

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paragraph 19-5.4.4 for operational and management requirements.

- R) a. **Surface Ships With Oil/Water Separators (OWSs) and Oil Content Monitors (OCMs).** Navy ships equipped with OWS and OCM shall attempt to limit oil and oily discharges to 15 ppm oil worldwide. OWSs will generally operate more effectively if the processed oily waste does not contain mechanical emulsions generated by shipboard equipment, chemical emulsions produced by detergents or other emulsifying agents and/or solid waste that could clog the OWS. If operating conditions prevent achieving less than 15 ppm, limit discharges to less than 100 ppm and only when beyond 12 nm from the nearest land.
- R) b. **Ships With OWSs or Bilge Water Processing Tanks (BWPTs) But Without OCMs** shall process all machinery space bilge water through an OWS or BWPT before discharge.
- R) c. **Surface Ships Without an Operating OWS But With an Oily Waste Holding Tank (OWHT)** shall, to the maximum extent possible, without endangering the ship or impairing its operations or operational effectiveness, direct all oily bilge water to the OWHT for shore disposal. Discharges are permitted beyond 50 nm from the nearest land if operating conditions are such that oily bilge water must be disposed of at sea. The ship shall pump the bottom, water phase overboard and ensure that the upper, oily phase is not pumped, except to a shore collection facility. Such discharges of oily bilge water shall take place only while the ship is underway.
- R) d. **Surface Ships With Neither an Operating OWS nor OWHT** shall retain all oily bilge water for shore disposal to the maximum extent possible, without endangering the ship or impairing its operations or operational effectiveness. Discharges are permitted beyond 50 nm from the nearest land if operating conditions are such that oily bilge water must be disposed of at sea. Such discharges of oily bilge water shall take place only while the ship is underway.
- e. **Submarines Without BWPTs.** When bilge water is to be discharged, after allowing for adequate separation time, submarines shall pump the bottom, non-oily water phase of bilge water overboard. The non-oily, water phase of bilge water shall not be pumped overboard within 50 nm except when the operations or operational capabilities of the submarine would be impaired by this requirement. In this case, the non-oily, water phase should be pumped as far from shore as practicable. In any case, the oily phase shall be held onboard and pumped to a shore collection facility. Submarines shall ensure this policy is met by written procedure. (R)
- 19-5.4.3 Shipboard Equipment.** The Navy shall install the following equipment/systems on ships to allow proper segregation and collection of shipboard waste oil: (R)
- a. OWSs, OCMs, OWHTs, and waste oil tanks (WOTs) to allow adequate processing of shipboard oily waste prior to its discharge overboard and to allow proper segregation and collection of shipboard waste oil; including oily waste ultrafiltration polishing systems installed on some new construction ships (R)
- b. Bilge pumps (oily waste transfer pumps), piping risers, and weather-deck connections to allow safe and convenient ship-to-shore transfer of oily waste
- c. Cam-lock discharge connections, 2-1/2-inch (MS 27023-14), for OW/WO discharge to allow quick connect/disconnect with shoreside offloading hoses
- d. OW/WO adapters to accommodate hoses with standard International Maritime Organization (IMO) flanges for use by Navy ships visiting foreign or non-Navy ports (R)
- e. Mechanical seals on appropriate shipboard pumps to minimize the quantity of oily wastewater collected in ship bilges

f. Improved tank level indicators to reduce the potential for overboard spills during fueling and oil and oily waste handling and transfer operations

g. Contaminated fuel settling tanks to receive and assist reclamation of fuel tank strippings that might otherwise be discharged overboard

h. Oil-water interface detectors, cargo tank cleaning systems, and where appropriate, segregated ballast tanks on oilers and oil tankers.

All oil pollution abatement equipment/systems shall be inspected prior to the issuance of a user's certificate to verify proper installation and operation.

R) **19-5.4.4 Operational and Management Requirements.** Shipboard operational and management requirements for bilge water, oil, oily waste, and shipboard oil pollution abatement are described in the following paragraphs. Reference (c), chapter 593, section 3 provides detailed procedural instructions implementing these requirements.

A) a. **Bilge Water and Oily Waste.**

(1) Bilge water and oily waste minimization. Ships shall minimize oil contamination of bilge water. Mechanical seals in oil and water pumps and proper segregation of oily and non-oily wastewater will greatly reduce the generation of oily waste.

R) (2) Contaminated bilge water and oily waste. Ships shall not use bilge cleaners or chemical agents that promote chemical emulsion (i.e., detergents and surfactants) for machinery space cleaning. Prohibition of these substances will enable OWSs to perform more effectively. NAVSEASYS COM recommends short-lived detergents for bilge cleaning. In port, ships shall offload oily waste containing chemical emulsion agents or contaminants from other than routine sources of bilge water to shore receiving facilities.

If oily waste has become contaminated from other than routine sources, such as aqueous film-forming foam (AFFF), solvents, anti-freeze, or other HM, ships shall advise the receiving shore facility prior to offload. Since some States may consider bilge water to be contaminated, ships in those States shall consult with the host receiving facility for collection and discharge requirements.

Chapter 9 requires shore activities to periodically sample/test bilge water and other OW/WO batches to see if the waste contains any material that would classify it as hazardous. If it exceeds established standards, the shore activity must manage it as a hazardous waste. The activity OW/WO Management Plan will provide sampling protocols and procedures and require actions to trace and eliminate the source of any contamination in the OW/WO. Activities will determine the frequency of testing by referencing the historic characteristics of samples and the level of confidence in the consistency of samples. Ships shall comply with shore activity established bilge water and oily waste sampling requirements. (A)

(3) Bilge water and oily waste disposal in port. Navy policy is to maximize separation, recycling, and reuse of oil. While in a Navy port, ships shall dispose of bilge water and oily wastes per supporting activity guidance using one or more of the following approaches: (R)

(a) Permanent shore reception facilities. In Navy ports that provide shore oily waste collection, shoreside collection of bilge water and oily wastes followed by recovery of recyclable products is the preferred method of dealing with these shipboard wastes. (R)

(b) OWS system. Ships equipped with bilge water OWS and OCM systems may use them, provided the effluent does not exceed 15 ppm, cause a sheen, or violate any other applicable water quality standard. Prior to discharging in a Navy port via an OWS, ships shall consult with the supporting shore facility host command for discharge requirements. In non-Navy ports, use of (R)

the OWS is the preferred method of dealing with these wastes.

(c) Ship waste offload barges (SWOBs). Supporting shore activities shall operate SWOBs per reference (e) and their OW/WO Management Plan. Ships not equipped with an operable OWS shall use waste oil collection lines ashore, if available, or shall discharge to a SWOB.

- R) (4) Emergency dewatering. Ships shall not use eductors to dewater bilges containing oily waste, except in emergency situations when OWS systems (including OWHTs) are not available or are not of sufficient capacity to handle the immediate flow requirements. If a ship must use an eductor, it shall make every effort to discharge beyond 12 nm from land and while underway. The ship shall make an engineering log entry concerning eductor use to discharge bilge waste overboard.

**b. Waste/Used Oil**

(1) Shipboard personnel shall make maximum use of available port facilities for disposal of all waste/used oil products prior to departing from and upon returning to port. Those facilities include SWOBs, pierside collection tanks, tank trucks, bowsers, and contaminated fuel barges.

(2) Shipboard personnel shall collect, store separately and label used lubricating oils for eventual shore reclamation. They shall not discharge lubricating oils into the bilge, OWHTs or WOTs.

(3) Shipboard personnel shall collect synthetic lube oils and hydraulic oils separately from other used/ waste oils. Ships that do not have a system dedicated to collect used synthetic oils shall use 5- or 55-gallon steel containers, properly labeled per reference (f) for eventual shore recycling. All personnel handling synthetic oil shall wear protective clothing, as specified in material safety data sheets (MSDSs).

(4) Ships shall retain containers (such as drums, cans, etc.) in which oil products were originally packaged and properly label them per reference (f) for storing and transferring oil ashore.

c. **Fuel Transfer.** Ships shall fuel, defuel, transfer fuel internally, and offload oil in restricted waters during normal daylight working hours, when operating schedules permit. They shall conduct these evolutions with well-trained personnel (see paragraph 19-5.5). They shall observe the following precautions to minimize oil spills:

(1) Maintain topside watches at all locations of possible spills and rig direct communication to fuel transfer pump stations.

(2) Establish check-off lists and procedures for valve alignment and transfer operations. Double-check alignment of all transfer system valves.

(3) Use only qualified personnel to perform the detailed transfer procedures.

(4) Continuously monitor each tank level while filling with fuel. Use remote tank-level indicators as the primary method of obtaining tank levels.

(5) Prior to actual fuel transfer, transfer personnel shall inform the responsible ship's officer (commanding officer, command duty officer, or officer of the deck) and the fuel supplier that the ship is ready to commence fueling operations.

**d. Fuel Tank Stripping**

(1) Ships shall not use eductors to strip fuel or cargo tanks.

(2) On ships equipped with fuel tank stripping systems, ships shall discharge the strippings to contaminated fuel settling tanks (CFSTs) for reuse. Ships shall not discharge fuel tank strippings overboard.



(3) CFSTs are for strippings from fuel storage and service tanks only. Ships shall not discharge bilge water and waste or other wastewater into CFSTs.

- A) e. **Compensated Fuel/Ballast Water Systems and OW/WO.** Under normal circumstances, compensated fuel/ballast water is neither OW/WO nor HW. Ships with compensated fuel/ballast systems shall comply strictly with fuel transfer and ballasting procedures to ensure ballast water does not become contaminated with oil or any other waste. Ships utilizing self-compensating fuel tanks shall ensure adequate margin is preserved in tanks to prevent inadvertent discharges of oil with the compensating water. Some State regulations require supporting shore activities to collect and process compensated fuel/ballast water prior to discharge to the environment.

- A) f. **Oil-contaminated Solid Waste**

(1) Ships shall containerize oil and fuel filters and other items coated or soaked with oil for shore disposal. They may weight these items for negative buoyancy and jettison them beyond 50 nm of shore if necessary for safety of ship or health of crew.

(2) If a ship has the necessary equipment, it may process oily rags/sorbents on board.

(a) Ships equipped with marine solid waste incinerators shall not burn heavily soaked oily rags or rags contaminated with hazardous materials. Ships may only dispose of rags that are lightly soiled (i.e., less than 50 percent of the rag surface area wetted and not dripping without wringing) with petroleum products or other non-hazardous liquids via incinerators beyond 12 nm from shore.

(b) Ships equipped with rag recycling machines should process rags for recycling.

(3) Ships should store all rags that are not incinerated or recycled aboard in suitable

closed containers designed to contain flammable or combustible materials in a space fitted with adequate ventilation and fire suppression systems.

**19-5.4.5 Exemption From Oily Waste Restrictions.** Exemption from oily waste restrictions may be necessary at certain times and under certain circumstances. Instances of specifically authorized exemptions include the following:

a. While operating in waters beyond 50 nm from land, with shipboard oily waste processing equipment inoperable due to equipment malfunction, a Navy ship may discharge oily bilge water directly to the sea if the on board retention of such water poses a safety hazard. They may conduct the discharge only after a concerted effort has been expended to repair the equipment malfunction. Commanding officers shall minimize discharges under such circumstances. The ship shall duly note the details of a discharge (nature, quantity and geographic location) in the engineering log. Ships shall report equipment casualties that either threaten or result in a discharge of oily water through the Casualty Report (CASREP) system. The initial report shall note the potential for discharge. All subsequent status reports shall report the frequency and approximate amount of actual discharges.

b. A Navy ship may discharge oily waste to the sea in any other situation in which a commanding officer decides that a discharge of such wastes is required to ensure crew or ship safety, or to prevent machinery damage. For example, the ship shall not allow oily bilge water to reach levels that threaten chloride contamination of shipboard condensate systems. Commanding officers shall minimize such discharges and ensure the recording of details of the discharge (nature, quantity and geographic location) in the engineering log. If such a discharge is necessary within 12 nm from shore, ships shall treat the discharge as an oil and hazardous substance (OHS) spill.

c. While operating in waters beyond 50 nm from land, a Navy ship may discharge directly

overboard oily waste from isolated spaces, such as JP-5 pump rooms, if the ship does not have the capability to collect and transfer such waste for processing through the OWS system. Such discharges shall contain only distillate (non-persistent) oils and shall result in discharges of minimal quantities of oily waste.

- R) **19-5.5 Training.** Ships shall train personnel who operate or maintain waste oil and oily waste holding, processing, disposal, or transfer equipment on the proper procedures for oily waste disposal, including hookup and transfer of waste oil and oily waste to shore facilities and at sea discharge restrictions. Personnel assigned to supervise oily waste processing and disposal operations shall complete the Oil Pollution Abatement (OPA) Equipment Operation and Maintenance course, K-652-2196, prior to assuming these duties. All personnel who operate or maintain oil processing, transfer or disposal equipment shall complete the Oil Spill Control and Removal Equipment PQS, NAVEDTRA 43195-B, prior to assignment to those duties.

## **19-6 Hazardous Waste (HW) and Hazardous Material (HM)**

### **19-6.1 Legislation (This section contains background material from which Navy policy is derived.)**

**19-6.1.1** The CWA prohibits the discharge of harmful quantities of hazardous substances (HS) into or upon U.S. waters out to 200 nm.

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**19-6.1.2** The Resource Conservation and Recovery Act (RCRA) regulates generation, treatment, storage and disposal of hazardous waste. RCRA provides that HW generated on public vessels is not subject to storage, manifest, inspection or record keeping requirements until the ship transfers such waste ashore or transfers it to another public vessel within the territorial waters of the U.S. and then only after that vessel stores it aboard for more than 90 days after the date of transfer.

**19-6.1.3** Through the Toxic Substances Control Act (TSCA), Federal restrictions govern the manufacture, use, labeling and disposal of polychlorinated biphenyls (PCBs), asbestos and asbestos-containing waste.

**19-6.1.4** Federal law pertaining to national defense requires that contracts for work on board naval vessels (other than new construction) identify the type and amount of HW expected to be generated and responsibility for the disposal. The law further provides that a Navy generator number be used for Navy-generated HW, a contractor generator number for contractor-generated HW, and both a Navy and contractor generator number for HW co-generated by the Navy and the contractor, regardless of who owns the site where the waste is generated. The law further requires naval vessels to offload HW to the maximum extent feasible prior to arrival at a private repair facility.

### **19-6.2 Terms and Definitions**

**19-6.2.1 Hazardous Material.** Any material that, because of its quantity, concentration or physical, chemical or infectious characteristics, may pose a substantial hazard to human health or the environment. In the case of ships, this includes used or excess HM.

**19-6.2.2 HM Contaminated Rags.** Cleaning rags or other sorbents contaminated with solvents, adhesives, paint, or other HM defined in paragraph 19-6.2.1.

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**19-6.2.3 Used or Excess Hazardous Material.** HM for which there is no further, immediate use on board the ship possessing the material. Such material may ultimately be used on another ship or within the shore establishment for the same purpose or a purpose other than initially manufactured or by commercial industry. Used HM is material that has been used in a shipboard process. Excess HM is unused material in full, properly sealed containers.

**19-6.2.4 Hazardous Substance.** HM or HW.

**19-6.2.5 Hazardous Waste.** A solid waste or combination of solid wastes, which because of its quantity, concentration or physical, chemical or infectious characteristics may:

a. Cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

The term solid waste includes liquid, semi-solid or contained gaseous material.

**19-6.3 Requirements.** Reference (g) establishes policy and assigns responsibilities for HM pollution prevention. It requires that HM be selected, used and managed over its life cycle so that the DOD achieves the lowest costs required to protect human health and the environment. Additionally, State and local regulations prescribe requirements for the proper storage, packaging, labeling, transportation and disposal of HM.

#### **19-6.4 Navy Policy**

**19-6.4.1 Shipboard Procedures.** Ships shall follow these procedures in the management of used/excess HM:

a. Navy ships shall not discharge overboard untreated used or excess HM generated aboard the ship within 200 nm of land unless specifically allowed by appendix L. To the maximum extent practicable, ships shall retain used/excess HM on board for shore disposal. Appendix L provides detailed guidance for HM discharges.

b. Under no circumstances may a ship collect used/excess HM from other ships or HW from shore facilities and transport it to sea for the purpose of disposal.

c. Reference (d), chapters B3, C23 (surface ships), and D15 (submarines), govern shipboard labeling, handling and storing of HM.

d. Reference (d), chapters C23 and D15; reference (c), chapter 593; and applicable PCB advisories govern shipboard labeling, handling and storing of PCBs and items containing PCBs.

#### **NOTE:**

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Recently, the Navy discovered many uses of PCBs not recognized or authorized by 40 CFR 761. At the direction of CNO, COMNAVSEASYS COM provided guidance on shipboard PCB issues through serialized NAVSEA PCB Advisories (beginning with Advisory 93-1) (reference (h)). Advisories applicable to ships have been incorporated into reference (d). Ships shall implement the PCB requirements of reference (d).

e. Ships shall turn over used HM received from another ship within U.S. territorial waters to a supporting shore activity for processing within 90 days of receipt.

f. To the maximum extent practicable, ships shall remove all HM from a ship before decommissioning, but in no case later than 90 days after decommissioning or removal from service. Any HW created by shipboard operations, preservation or maintenance after decommissioning shall be removed within 30 days of the time it is created.

**19-6.4.2 Ship-to-Shore Transfer.** Ships shall transfer used or excess HM to a shore activity for determination of disposition. If the shore activity determines that used/excess HM has no further use, it will declare the material to be waste and process it per RCRA requirements governing generation of HW.

a. Prior to transfer ashore, ships shall segregate, containerize and label used HM per reference (d), chapters B3, C23 (surface ships), and

D15 (submarines). Ships shall fill containers with only one type of HM (i.e., all the used HM in a container shall normally be of only one stock number (except where different stock numbers are issued to specify different sized containers)). Failure to do so may result in a charge to the fleet for laboratory analyses if it is determined that the material will be disposed of as HW. If the contents of the container are unknown, the label shall so state, and the cost of chemical analysis to determine specific content shall be paid out of fleet accounts.

b. When visiting Navy ports, Navy ships shall request used/excess HM pickup by the cognizant shore activity representative (the Hazardous Material Offload Team (HOT) coordinated by the Fleet and Industrial Supply Center (FISC) and including the public works center (PWC). Person-to-person contact is required during the actual transfer of HM to the shore activity. Ship's force shall provide used HM in a suitable container (either the original container or one specified in reference (d), appendix C23-A or D15-C), properly labeled, accompanied by an MSDS (if the material originated outside the supply system or an MSDS is unavailable in the Hazardous Material Information System (HMIS)) and a completed DD 1348-1 at the time of transfer.

c. When visiting non-Navy ports and foreign ports, Navy ships shall offload used HM only when necessary and feasible. The ship shall identify in the LOGREQ the types and amount of used HM to be offloaded. If unable to find adequate facilities at non-Navy ports, the ship shall hold HM for offloading at a Navy port. All HM shall be properly labeled and containerized. If offload is necessary in foreign ports, commanding officers must ensure compliance with applicable customs laws and the SOFA.

d. Prior to entering a private shipyard for an availability, naval vessels (except contractor-operated vessels) shall:

(1) To the maximum extent feasible offload used/excess HM at a Navy or other public facility.

(2) Identify to the SUPSHIP or Port Engineer responsible for the private shipyard, a ship HM coordinator for the availability. Give this individual authority and resources to ensure ship-board compliance with HM and HW management procedures and site specific management practices established by the SUPSHIP or port engineer.

(3) Identify to the SUPSHIP or Port Engineer during preavailability planning conferences the types and amounts of HW anticipated by ship's force during the availability.

(4) Comply with all established HW and HM management practices and those site-specific procedures delineated by the SUPSHIP or port engineer.

Type commanders responsible for ships in private shipyards for availabilities shall monitor ship compliance with established procedures.

#### **19-6.4.3 Ship-to-Ship Transfers.**

a. Except where used/excess HM is transferred from a tended unit to a tender, ships shall only transfer used HM to another ship during operations that preclude the ship entering a port in which normal offload may occur. Transfers of HM shall be for the sole purpose of returning the material to a supporting shore activity. Ships shall offload all used HM within 5 working days of arrival at a U.S. Navy port.

b. Prior to transfer to the receiving ship, ships shall properly segregate, containerize and label used HM per reference (d), chapters B3, C23 and D15. Responsibility for packaging, documentation and labeling shall rest with the originating ship.

c. After receiving used HM within U.S. territorial waters from another ship for eventual

shore processing, the receiving ship shall offload that material to a shore facility within 90 days of receipt. This includes transfer from another ship while in port. For information on shore activity requirements, see paragraph 12-5.2.1.

#### **19-6.4.4 Transporting Shore-Generated Hazardous Waste Aboard Ship.**

Navy ships shall not accept HW from shore facilities in the U.S. for transportation to another location. Navy ships may accept HW from a shore activity outside the U.S. for transportation to the U.S. or to a foreign country only when specifically tasked by competent authority. The authority shall include specific instructions on procedures to be used to ensure proper notice to the receiving authorities and compliance with applicable laws and regulations at the destination.

**19-6.5 Training.** Reference (d), chapter B3, provides training requirements for personnel handling, storing and disposing of HM.

### **19-7 Solid Waste**

#### **19-7.1 International Conventions and Legislation (This section contains background material from which Navy policy is derived.)**

**19-7.1.1 MARPOL.** Annex V of MARPOL addresses shipboard solid waste discharge at sea. Annex V establishes three major requirements:

- a. No plastic discharges at sea worldwide.
- b. Outside of special areas, ships shall not discharge solid waste within 3 nm from shore. Ships may discharge comminuted, pulped, or ground wastes including food wastes, paper, rags, or glass whose discharge is able to pass through a screen with a mesh size no larger than 25 mm between 3 and 12 nm from shore. They may discharge non-floating solid waste beyond 12 nm from shore. Ships may discharge floating waste beyond 25 nm from shore.
- c. Within special areas, food waste is the only solid waste discharge authorized. Ships may

discharge food waste beyond 12 nm from shore. To date, three special areas are in effect internationally: the Baltic Sea, the North Sea and the Antarctic Region (south of 60 degrees south latitude).

#### **NOTE:**

MARPOL Annex V special areas and special areas that are in effect are not necessarily the same as those specified in MARPOL Annex I.

The MARPOL Convention provides that the above Annex V requirements do not strictly apply to warships. Party states (including the U.S.) must, however, establish standards for their warships that require such vessels to conform as closely as practicable with the international standard, without compromising operational effectiveness.

**19-7.1.2 Act to Prevent Pollution from Ships (APPS).** APPS implements MARPOL Annex V for the U.S. APPS requires that U.S. public vessels, including warships, to comply with MARPOL Annex V requirements by established deadlines: Surface ships must comply with the plastic discharge prohibition not later than 31 December 1998 and with the special area limitations by 31 December 2000. Once surface ships are equipped with plastic processors, surface ships must immediately comply with the plastic discharge prohibition. Submarines must comply with both the plastic discharge prohibition and the special area requirements after 31 December 2008. However, APPS permits U.S. Navy ships to discharge in MARPOL Annex V special areas in the following manner:

- a. Ships may discharge a slurry of seawater, paper, cardboard or food waste capable of passing through a screen with openings no larger than 12 millimeters in diameter outside 3 nm from land.

b. Ships may discharge metal and glass that have been shredded and bagged to ensure negative buoyancy outside 12 nm from land.

**19-7.1.3 Ocean Dumping Act (ODA).** ODA prohibits U.S. entities from transporting material from the U.S. or from any other place for the purpose of dumping it into ocean waters, unless a permit has been obtained from the U.S. EPA. ODA does not apply to waste that is generated aboard ships while underway.

**19-7.1.4 Clean Water Act.** Prohibits the discharge of pollutants (including solid waste) from ships into waters of the U.S. within 3 nm from shore. (Discharge of solid waste pollutants beyond 3 nm from shore is regulated under APPS.)

**19-7.1.5 Other Statutes.** Various statutes authorize the U.S. Department of Agriculture (USDA) to regulate the handling of foreign food and foreign source garbage entering the U.S. via ship and aircraft. U.S. Navy ships must comply with those regulations.

## **19-7.2 Terms and Definitions**

**19-7.2.1 Foreign Source Garbage.** Goods, food wastes, wrappers, containers and disposable materials originating in any foreign country (excluding Canada) or Hawaii, Puerto Rico, U.S. Virgin Islands, American Samoa, Guam and the Trust Territories of the Pacific Islands.

**19-7.2.2 Food Waste.** Spoiled or unspoiled victual substances, such as fruits, vegetables, dairy products, meat products, food scraps and food particles.

**19-7.2.3 Garbage.** For consistency with international law, this chapter adopts the MARPOL Annex V definition of garbage: All kinds of victuals and domestic and operational waste generated during the normal operation of the ship. The MARPOL term "garbage" therefore encompasses shipboard solid waste, including plastics, food waste and dry waste such as paper, cardboard and wood, traditionally referred to as "trash."

**19-7.2.4 Pulped Garbage.** Pulped, ground or comminuted garbage capable of passing through a screen with openings no greater than 12 millimeters (0.47 inch).

**19-7.2.5 Plastic Processor.** A device that melts, compresses and sanitizes plastic waste so that it can be efficiently and safely stored aboard ship for shore disposal. The Navy installed plastic processors in most Navy surface ships (excluding those operating at the direction of COMSC) before 31 December 1998, requiring them to meet the plastics discharge prohibition following installation.

**19-7.2.6 Special Area.** A sea area where, for recognized technical reasons in relation to its oceanographic and ecological condition and to the particular character of its traffic, enhanced efforts are required to minimize pollution from ships. The IMO designates Annex V special areas. Their designation becomes effective internationally after IMO determines that littoral nations have sufficient capacity to manage the potential waste from ships after special area status becomes effective. Three Annex V special areas are in effect: the Baltic Sea, the North Sea and the Antarctic Area (south of 60 degrees south latitude). Other Annex V special areas are designated but not yet in effect are: Mediterranean Sea, Black Sea, Persian Gulf, Red Sea and Wider Caribbean Area.

**19-7.3 Requirements and Navy Policy.** Requirements applicable to garbage discharge at sea include both legal requirements and requirements that the Navy has adopted as a matter of policy to enhance protection of the marine environment. For ease of comprehension, the legal requirements and the requirements of Navy policy regarding shipboard solid waste discharges have been combined below.

### **19-7.3.1 Plastic Discharges**

a. Ships shall minimize the volume of plastic material taken to sea that may become waste while at sea. They shall replace plastic disposable items with non-plastic items where possible. If

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appropriate, ships shall remove plastic wrapping and shipping materials from supply items before bringing them on board. They shall minimize the amount of plastic supplies used.

**NOTE:**

The Navy will increasingly use plastic CD-ROM disks for distribution of directives. When superseded, they become plastic wastes and ships at sea shall dispose of them as such.

- R) b. When available, ships should use combat logistics force (CLF) ships (including COMSC ships) to transfer plastic waste ashore rather than disposing of it overboard per paragraph 19-7.3.1c. If transferring processed or non-food contaminated plastic waste to another ship, ships shall observe the following practices:

(1) The sending ship shall contact the receiving ship to determine if space is available to accommodate the plastic waste. The sending ship shall not transfer waste without the receiving ship's concurrence.

- R) (2) The sending ship shall transfer only processed or non-food contaminated plastics. Ships shall develop procedures to ensure that packages for transfer do not contain articles such as food contaminated plastics, other trash, garbage and hazardous material.

(3) The sending ship shall package the plastic waste to permit safe handling by both the sending and receiving ships. Securely banded tri-walls are the preferred method of transferring processed or non-food contaminated plastic waste. If compactors are installed aboard, ships should compact plastic waste prior to packaging.

(4) Ships shall clearly mark the content of processed or non-food contaminated plastic waste packages on the outside.

c. **Surface Ship Plastic Retention.** Discharges of plastics to the marine environment from Navy surface ships are prohibited by law. Ships with an inoperable plastics waste processor may discharge plastics overboard outside 50 nm from land only to secure the safety of the ship, health of the crew, or save a life at sea. The ship shall make such discharges in weighted bags only after making an effort to repair the equipment malfunction. Commanding officers shall minimize the amount of plastics discharged under these circumstances. The commanding officer shall note the details of such a discharge (date, time, and location of discharge, approximate weight and cubic volume of the discharge, and nature of the material discharged) in the Ship's Deck Log. Ships shall report equipment casualties that either threaten or result in a discharge of plastics through the CASREP system. The initial CASREP shall note the potential for discharge. The ship shall report the commencement of plastics discharges to the appropriate operational commander.

d. **Submarine Plastic Discharge Requirements.** Submarines shall limit plastics discharges to the minimum amount practicable. Buoyant garbage discharges from submarines are prohibited. (D)

e. **Plastic Discharge Record Keeping.** Surface ships or submarines shall record any discharge of plastic in the Ship's Deck Log. See paragraph 19-7.3.1c for details.

f. **Release of Military Equipment Containing Plastic.** The plastic retention requirements apply only to disposal of plastic waste. These requirements do not apply to normal use of expendable military equipment that contains plastic, such as targets, weather balloons, sonobuoys, etc., because the plastic in these items is not considered "waste" when normal use of the items results in their release into the ocean. However, in keeping with Navy policy to protect the marine environment, expendable items that can be retrieved after use, particularly targets, should be retrieved, if safe and practicable to do so. Once collected after (R)

use, plastic components of such items should be regarded and managed as plastic waste.

**19-7.3.2 Non-Plastic Garbage Discharges.** All references to "garbage" within this subsection refer to non-plastic garbage discharges.

a. No garbage discharges shall occur within 3 nm of any coastline.

b. Ships equipped with an operable pulper shall use it worldwide. Ships shall limit the discharge of pulped food products, paper and cardboard to beyond 3 nm of any coastline. Ships may discharge pulped garbage into shipboard MSDs only when a ship is docked and the MSDs are discharging to pier facilities. Ships shall not use garbage pulpers within 3 nm of any coastline in order to maximize necessary sewage holding capacity and thus reduce the risk of inadvertent overboard discharges of sewage.

c. Ships equipped with an operable shredder shall use it worldwide. They shall limit the discharge of shredded glass and metal products that are contained in a sinkable, burlap bag to beyond 12 nm from any coastline.

**NOTE:**

Fluorescent light bulbs contain a small amount of mercury and shall not be shredded, but shall be retained for shore disposal (see appendix L). Ships equipped with a fluorescent bulb crusher shall retain debris for shore disposal.

d. If a ship does not have pulper/shredder equipment or this equipment is inoperable, it may discharge unprocessed garbage beyond 25 nm from any coastline. Surface ships shall use available means to cause unprocessed garbage to sink as rapidly as possible. When required to make unprocessed garbage discharges to an in effect special area, the commanding officer shall note the details of such a discharge (date of discharge, special area involved, and nature and amount of discharge) in the ship's Deck Log. Ships shall report equipment casualties that either threaten or result in a discharge of unprocessed garbage to an in effect special area through the CASREP system. The initial CASREP shall note the potential for discharge. Reports of such discharges will be made to CNO (N45) per paragraph 19-7.3.3. (R)

e. Submarines may discharge compacted, sinkable garbage between 12 nm and 25 nm from land, provided that the depth of water is greater than 1,000 fathoms. When greater than 25 nm from land, direct discharge is permitted.

f. Surface ships equipped with incinerators may use them when operating beyond 12 nm from land for the disposal of non-plastic and non-hazardous garbage only.

g. Transporting any material to sea for the purpose of dumping requires a permit from the U.S. EPA. In most cases, obtaining a permit is a complex undertaking and beyond the capability of afloat units. To ensure compliance with ODA, Navy ships are prohibited from taking on any material in port for the purpose of dumping it at sea unless permission has been obtained from CNO (N45).



h. Although the at-sea disposal of garbage by ships is permissible (as indicated above), international guidelines encourage the use of port reception facilities as the primary means of shipboard garbage disposal, whenever practical. This means that surplus materials that can reasonably and safely be stored on board, such as damaged equipment or office furniture, shall be retained aboard for shore disposal.

**19-7.3.3. Special Area Discharge Reports.** Under APPS, the Secretary of Defense must report annually in the Federal Register on the amount and nature of discharges in special areas in effect in which the discharge did not meet Annex V limitations. Accordingly, upon completion of operations in special areas in effect, Navy ships shall report the following information to CNO (N45), information copies to the chain of command, regarding all discharges *other than food waste, pulped garbage and shredded and bagged metal and glass*:

- a. Date of discharge
- b. Special area involved
- c. Nature and amount of discharge (estimated pounds of plastic; unshredded metal and glass; unpulped wood, paper and cardboard; ceramic; or other non-food material).

Negative reports are required.

#### **19-7.3.4 Foreign Food and Garbage**

- a. Navy ships shall comply with USDA regulations pertaining to ship introduction of foreign source garbage into the U.S., its territories and possessions.
- b. If practicable, ships shall totally consume all produce (fruits and vegetables) bought in any foreign port or dispose of it beyond 25 nm

from U.S. shores. If not disposed of before entering within 25 nm from shore, ships shall segregate such produce as food wastes and dry materials (packaging, etc.) for special disposal ashore by one of the following USDA-approved methods:

- (1) Cooking by steam or other heat source in a leakproof container at 212°F for 30 minutes and disposal of residues by burying (sanitary landfill methods).

- (2) Incinerating in an incinerator approved by the EPA.

- (3) Grinding and flushing through a ship's CHT system (when installed) to a USDA-approved sewage system ashore.

c. The standards given above do not preclude discharge of any solid waste in an emergency when failure to do so would clearly endanger the health or safety of shipboard personnel.

#### **19-7.4 Training**

a. Ships shall train personnel responsible for handling ship's garbage on the discharge restrictions applicable to the waste before assignment to those duties. Such training shall include the proper collection, treatment and disposal of plastics waste.

b. Ships shall train personnel responsible for the supervision and approval of overboard disposal of solid waste on the legal requirements applicable to this waste category.

c. All personnel assigned to operate and maintain solid waste processing equipment (plastics waste processors, shredders, and pulpers), shall complete the Plastics Processor Computer-Based Training (CBT), A-690-0003, and the Pulp/Shredder CBT, A-690-0004, interactive courseware, as applicable, prior to assignment. (A

## 19-8 Medical Waste

### 19-8.1 Legislation (This section contains background material from which Navy policy is derived)

**19-8.1.1 U.S. Public Vessel Medical Waste Anti-Dumping Act.** Prohibits public vessel dumping of medical waste into ocean waters during peacetime, except under emergency conditions.

### 19-8.2 Terms and Definitions

**19-8.2.1 Medical Waste.** Medical waste is any waste generated during patient diagnosis, treatment or immunization. Medical waste is of two categories, infectious waste and noninfectious waste.

A) a. **Infectious Medical Waste.** Infectious medical waste is liquid or solid waste that contains pathogens in sufficient numbers and with sufficient virulence to cause infectious disease in susceptible hosts exposed to the waste. Specific examples of infectious wastes are provided in reference (i).

A) b. **Non-infectious Medical Waste.** Non-infectious medical waste includes disposable medical supplies and materials that do not fall into the category of infectious medical waste. Specific examples of non-infectious medical wastes are provided in reference (i).

### 19-8.3 Navy Policy

R) a. Ships shall steam sterilize, suitably package and store infectious medical waste for ultimate disposal ashore.

b. Reference (i) governs shipboard labeling, handling and storage of potentially infectious medical waste.

c. After steam sterilizing, ships properly equipped may incinerate infectious paper and cloth-based medical waste.

d. Ships shall not incinerate plastic and wet materials.

e. Ships shall collect sharps in plastic autoclavable sharps containers. They shall never recap, clip, cut, bend or otherwise mutilate needles or syringes to avoid causing accidental puncture wounds and infectious aerosols. Ships shall retain all sharps on board for proper disposal ashore. They shall dispose of unused sharps ashore in the same manner as medical waste.

f. Ships may dispose of liquid wastes by discharging them into the sanitary system.

g. Ships may dispose of non-infectious waste as garbage, not requiring steam sterilizing or special handling. Ships shall process and dispose of this material in the same method as prescribed for similar material in section 19-7 (e.g., plastics will be sent to the plastics waste processor; paper and cardboard will be pulped; and glass and metal (excluding sharps) will be shredded). (R)

h. Ships shall establish a system of tracking storage and disposal of infectious medical waste as required by reference (i). (A)

i. If retention of potentially infectious wastes would threaten the health or safety of personnel on board, create an unacceptable nuisance condition or compromise combat readiness, overboard discharge (excluding sharps) is authorized (using the methods prescribed for similar material in section 19-7) beyond 50 nm provided such waste has been steam sterilized and packaged for negative buoyancy. Ships shall record in the deck log the overboard discharge of infectious medical wastes. (R)

j. The requirement to steam sterilize before disposal at sea does not apply to submarines.

**19-8.4 Training.** Ships shall train personnel responsible for processing and disposing of shipboard medical waste to ensure that such actions comply with the requirements governing this waste.

## 19-9 Oil and Hazardous Substance Spills

### 19-9.1 Terms and Definitions

R) **19-9.1.1 Facility Response Team (FRT).** Emergency response personnel (formerly known as On-Scene Operations Teams) who are designated, trained and equipped to provide rapid response to OHS releases that occur on or from their facility.

**19-9.1.2 Navy On-Scene Coordinator (NOSC).** The Navy official designated to coordinate contingency planning and direct Navy OHS spill/ release response operations within a preassigned area. Shoreside NOSCs are normally the RECs designated by area environmental coordinators to coordinate environmental and other broad Navy shore activity issues on a regional basis (see chapter 1). Fleet NOSCs are fleet commanders who direct all fleet operations within assigned ocean areas. See chapter 10 for further clarification of NOSC assignment and responsibilities.

D) **19-9.1.3 Spill.** An accidental or not permitted discharge of OHS into or upon the water. In this chapter, the definition does not apply to spills on board ship that do not go over the side.

**19-9.1.4 Supervisor of Salvage (SUPSALV) Spill Response Team (SSRT).** Specially trained and equipped mobile spill response team maintained by COMNAVSEASYSCOM SUPSALV (NAVSEA 00C). COMNAVSEASYSCOM maintains the team and an extensive inventory of off-shore and large-scale spill response equipment to support NOSCs and commanding officers for off-shore, salvage-related, or major inland oil spills and HS releases.

### 19-9.2 Policy

**19-9.2.1 Designation of Fleet Navy On-Scene Coordinators.** Fleet CINCs shall designate the fleet NOSCs.

**19-9.2.2 Shore-Based Facility Response Teams (FRTs).** FRTs maintain trained personnel and specialized equipment to contain and recover OHS spilled into harbor waters. The primary functions of the FRTs are to respond to port spills and spills that can be readily contained and recovered using local facility equipment. (R)

**19-9.2.3 SUPSALV Spill Response Capability.** SUPSALV maintains an extensive inventory of salvage and large-scale oil spill response equipment to support pre-designated NOSCs in off-shore- and salvage-related spill control operations. SUPSALV's salvage inventory includes all equipment needed to remove oil and repair and salvage a stranded or damaged vessel. The spill response inventory includes booms; skimmers; tow vessels; pumps for offloading petroleum, oil, and lubricants (POL); portable storage; and related equipment. These inventories are located in response centers in Williamsburg, VA; Stockton, CA; Pearl Harbor, HI; and Anchorage, AK and are designed for rapid mobilization to spill sites worldwide. Salvage equipment is also maintained in Livorno, Italy; Sasebo, Japan; Bahrain; and Singapore. (R)

Trained operators, mechanics, and supervisory personnel deploy from U.S. response centers with the equipment. SUPSALV, headquartered in Washington, DC also maintains access to a full range of technical experts and advisors as well as specialty equipment from other government agencies, industry and academic institutions.

**19-9.2.4 Ship Spill Response Capability.** For spills over the side, ship's personnel under the commanding officer or master shall initiate immediate actions to mitigate the effects of the spill.

R) a. Each ship shall maintain a minimum of one Mk II Oil Spill Containment and Cleanup Kit,

AEL 2-550024006, for overboard oil and hazardous substance spill response. The Hazardous Material Spill Response Kit, AEL 2-550024007, discussed in reference (d), is available for spills that occur on board the ship. If the response to Navy ship spills/releases is considered beyond the ship's limited capability, the cognizant shore activity commanding officer or fleet NOSC will provide appropriate assistance and direct response efforts.

- R) b. While mitigating the spill, in all cases of spills/releases, the ship's commanding officer or master shall immediately report the incident to the cognizant shore activity commanding officer, the NOSC, and other officials as required by the ship's SCP. The Hazardous Material Control and Management (HMC&M) CD-ROM program lists spill response points of contact.

**19-9.2.5 OH Spill Response Within the U.S. Contiguous Zone.** Ships shall comply with the following OHS spill response procedures when within the U.S. contiguous zone:

- a. In Navy ports, the ship's commanding officer shall:

(1) Notify the shoreside NOSC/cognizant facility commanding officer by the most expeditious means possible. For environmentally significant spills, see paragraph 19-9.2.8.

(2) Notify the National Response Center (NRC) by telephone at (800) 424-8802.

(3) Take, insofar as practical, immediate actions to mitigate the effects of the spill.

(4) Follow up by submitting a naval message. Appendices H and I provide formats for OHS spill reports.

- b. In non-Navy ports (and elsewhere within the contiguous zone), the ship's commanding officer shall:

(1) Notify the appropriate shoreside NOSC and cognizant shore facility commanding officer specified in the shoreside NOSC contingency plan. For environmentally significant spills, see paragraph 19-9.2.8.

(2) Notify the NRC by telephone at (800) 424-8802.

(3) Take, insofar as practical, immediate actions to mitigate the effects of the spill. Rapid action by the ship's crew can result in containment and collection of the spill. Shipboard personnel shall use available means to clean up minor spills before requesting assistance from shore-based personnel.

(4) Follow up by submitting a naval message. Appendices H and I provide formats for OHS spill reports.

- c. See section 10-5 of this manual for information on NOSC responsibilities and reporting requirements. (A

**19-9.2.6 OHS Spill Response Outside the U.S. Contiguous Zone as Defined in Governing Contingency Plans.** For OHS spills in these areas, ships shall:

- a. Initiate immediate action to mitigate the effects of the spill.

b. Notify the predesignated fleet NOSC by naval message using the format in appendix H for oil and appendix I for HS. For information on environmentally significant spills, see paragraph 19-9.2.8.

- c. The fleet NOSC shall implement the applicable fleet NOSC Oil and Hazardous Substance Spill Response Plan. (R

**19-9.2.7 OHS Spill Response in Waters of Foreign Countries.** Ships shall take the following action for an OHS spill in these waters:

a. The ship's commanding officer shall initiate immediate action to mitigate the effects of the spill.

b. The ship's commanding officer shall immediately notify the predesignated fleet NOSC and/or shoreside NOSC (as defined in governing contingency plans) by naval message. Appendices H and I contain formats for OHS spill/release messages.

R) c. The fleet and shoreside NOSC shall implement the applicable NOSC Oil and Hazardous Substance Spill Response Plan.

**19-9.2.8 Environmentally Significant Spills.** For spills anywhere resulting from catastrophic events, causing significant adverse public reaction, having geopolitical implications or for other causes warranting OPREP-3 special incident reports per reference (d), ships shall make the initial report by the OPREP-3 system. Following the OPREP-3 report, the cognizant fleet or shoreside NOSC shall forward an amplifying report in the format prescribed in appendix H (for oil) or appendix I (for HS).

R) **19-9.2.9 Fleet Oil and Hazardous Material Spill Response Plans.** Fleet CINCs, when acting as the NOSC, shall prepare fleet OHS Spill Response Plans for spills that occur outside the U.S. contiguous zone. Such plans shall include spills in foreign waters and ports. COMNAVSEA- SYSCOM (SUPSALV) shall provide assistance to Fleet CINCs in preparing the plans.

R) **19-9.2.10 Shipboard Spill Contingency Plans (SCPs).** Each Navy and MSC ship shall develop a written Oil/HS SCP. Ships may consolidate the SCP with the HM SCP required by reference (d), but shall address the unique procedures for spills over the side and use of the MK II Oil Containment and Cleanup Kit. The plan(s) shall contain procedures for reporting, containment, control,

recovery, and disposal of spilled material, protective clothing, and spill clean-up materials; information sources for oil and HS; and names and telephone numbers of fleet as well as shoreside NOSCs. Although neither Coast Guard nor State officials have authority to require preparation of public vessel OHS SCPs, the Navy will provide Navy ship OHS SCPs to Coast Guard and State officials upon request.

### **19-9.3 Training**

a. Ships shall conduct and document at least one OHS spill response drill for each duty section annually. These drills shall include deployment of the Mark II Oil Containment and Cleanup Kit or Hazardous Material Spill Response Kit and exercising notification practices, including simulated telephone calls and the drafting of "do not release" messages to higher authority. Ships may take credit for responding to actual spills, when such spills meet drill objectives. Where possible, the ship shall include OHS spill response requirements into other routine shipboard emergency drills. Responsible officers shall incorporate lessons learned during these drills into the ship's SCP. Ships are encouraged to participate in local area OHS spill command post exercises and in NOSC/ U.S. Coast Guard-sponsored triennial "area exercises" designed to test worst case spill response capabilities.

b. The ship shall train in-port watchstanders and command duty officers on in port OHS spill response procedures, the ship's SPC, and local notification requirements prior to assignment.

c. One petty officer in each inport fireparty and each repair party shall qualify on Watchstation 304, Oil/Hazardous Material (Substance) Spill Response Scene Leader, in the Hazardous Material/Environmental Protection Programs Afloat PQS, NAVEDTRA 43528-A, within 6 months of assignment. For submarines, type commanders shall specify requirements for completion of Watchstation 304 of the PQS, so that appropriately qualified individuals are present at the scene of any HM or oil spill.

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## **19-10 Ship Ballast Water and Anchor System Sediment Control**

**19-10.1 Ballast Water Guidelines.** The Marine Environmental Protection Committee of the International Maritime Organization (IMO) has developed guidelines for the control of ship ballast water to prevent the introduction of unwanted aquatic organisms and pathogens. The U.S. Coast Guard published these guidelines for adoption as voluntary standards to decrease the possibility of further introduction of cholera and other pathogens into U.S. waters. Since Navy ships operate worldwide, the Navy has chosen to adopt the intent of the Coast Guard standards.

**19-10.2** Pollution potentially infects water in harbors, rivers, inlets, bays, landlocked waters and the open sea within 12 nm of the entrance to these waterways. Fleet surgeons or their representatives may declare other areas polluted. Some species if taken up with ballast water and transferred to a different location or ecosystem could cause damage or be harmful to the ecosystem. These species are more prevalent within 3nm from the shore or within the polluted areas described above.

### **19-10.3 Policy**

a. If it is necessary for a surface ship to load ballast water in an area that is either potentially polluted (as defined in paragraph 19-10.2) or within 3 nm from the shore (e.g., amphibious ships operating in such waters and ballasting to operate landing craft or tankers ballasting to replace off-loaded cargo), the ship shall pump the ballast water out when outside 12 nm from shore and twice fill the tank(s) with clean sea water and pump prior to the next entry within 12 nm from shore. Surface ships will effect a ballast exchange twice in clean water, even if ballast water was pumped out before exiting the polluted waters or 3 nm limit, since residual water remaining in a tank after emptying it may still contain unwanted organisms, that could be transferred during the next ballasting evolution.

### **NOTE:**

Ballast water exchange is not required during local operations or when reentering within 12 nm in the same locale as the ballast water was initially loaded.

b. Surface ships' engineers shall record in the ship's engineering log the loading of ballast water in potentially polluted areas or within 3 nm from land and the flushing of ballast tanks to rid them of possible pollutants or unwanted species. The entry shall include the geographical position and the amount of ballast water taken on.

c. Surface ships with seawater compensated fuel stowage systems shall also record sea-water intake occurring in potentially polluted areas or within 3 nm of shore during routine internal fuel transfer for propulsion plant operation (but need not effect a ballast water exchange).

d. Surface ships shall routinely wash down anchors, chains and appendages with seawater when retrieving them to prevent on board collection of sediment, mud and silt. Where possible following anchor retrieval, surface ships shall also wash down chain lockers outside 12 nm from land to flush out sediment, mud or silt.

e. Amphibious vessels launching and recovering amphibious vehicles shall ensure those vehicles, including their treads, are washed down after completion of operations. Ships shall dispose of wash water before entering within 12 nm of the next operating area.

## **19-11 Protection of Marine Mammals**

**19-11.1 Legislation (This section contains background material from which Navy policy is derived.)**

**19-11.1.1 Marine Mammal Protection Act.** Protects marine mammals by prohibiting unauthorized "taking" of marine mammals in the U.S. or on the high seas.

## 19-11.2 Terms and Definitions

**19-11.2.1 Marine Mammal.** Any ocean dwelling mammal, including sea otters, manatees, dugongs, sea cows, seals, walruses, whales, dolphins and porpoises or ones that primarily inhabit the marine environment (such as polar bears).

**19-11.2.2 Taking.** To harass, hunt, capture or kill or attempt to harass, hunt, capture or kill any marine mammal.

## 19-11.3 Navy Policy.

**19-11.3.1 Marine Mammal Protection.** Marine mammals enjoy protection under the Marine Mammal Protection Act. Therefore, no Navy vessel shall deliberately harass a marine mammal. Commanders and commanding officers shall plan and act to protect marine mammals during operations and planning.

### 19-11.3.2 Whale Strikes

R) a. To assess the Navy's compliance with the Marine Mammal Protection and Endangered Species Acts, ships shall report all instances of whale strikes to CNO (N45). Reports are intended to assist the Navy in assessing compliance status only. Ships are not expected to report to outside agencies unless special circumstances apply.

A) b. For ease of reporting, ship shall use the OPREP/Unit SITREP format text fields of reference (e) without the flagword "Unit SITREP", or if the incident requires an actual OPREP/Unit SITREP report, ships shall submit the report per normal procedures with CNO (N45) included as an information addressee. For an actual OPREP/Unit SITREP, the ship should include the whale strike details in the initial report or subsequent updates as time allows.

c. The following is an example message with general text fields to include:

PRIORITY

FM: [REPORTING SHIP]  
TO: CNO WASHINGTON DC//N45//  
INFO: [APPROPRIATE CHAIN OF COMMAND]

UNCLAS//N05090//  
MSGID/GENADMIN/[REPORTING SHIP]//  
SUBJ/WHALE STRIKE REPORT//  
RMKS/1. WHALE STRIKE DETAILS  
A. DATE, TIME, AND LOCATION  
B. VESSEL'S COURSE AND SPEED  
C. OPERATIONS BEING CONDUCTED BY THE SHIP  
D. WEATHER CONDITIONS, VISIBILITY AND SEA STATE  
E. DESCRIBE THE WHALE IN AS MUCH DETAIL AS POSSIBLE; E.G., LENGTH, COLOR, OTHER DISTINGUISHING FEATURES  
F. NARRATIVE OF INCIDENT, INCLUDING RELATIVE POSITION AND MOVEMENTS OF SHIP AND WHALE  
G. INDICATE IF PICTURES/VIDEOS WERE TAKEN.

d. Reporting of other direct interactions with whales, such as instances where naval units assist whales entangled in nets, is also encouraged.

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## 19-12 Floating Drydocks

### 19-12.1 Terms and Definitions

**19-12.1.1 Floating Drydock.** A mobile dock, floating in water, capable of lifting a host ship for repairs to its underwater hull.

**19-12.2 Navy Policy.** Drydocks shall follow these procedures in handling solid waste:

#### a. Industrial Wastes

(1) Using vacuum methods, drydocks shall periodically remove and send to shore facilities for disposal: spent sand, metals, wood, liquid wastes, solid wastes and all other industrial waste from the floor of the drydock. Drydocks shall pre-

vent those wastes from entering the air or surrounding waters. Prior to flooding the dock, they shall remove all loose materials and floors and vacuum clean the chainways.

(2) Floating drydocks equipped with industrial waste collection systems shall use the systems to the maximum possible extent for processing waste from hull-blasting or anti-fouling paints. If the drydock discharges the processed water into the sewer system or directly into surface waters, it shall comply with applicable Federal, State and local regulations. Discharges into the surface waters, may require a NPDES permit.

b. **Sewage and Graywater.** Where possible, drydocks and hosted vessels shall transfer all sewage and graywater ashore for proper disposal.

c. **Discharge Permits.** Floating drydocks may be required to obtain Federal or State Clean Water Act discharge permits. See paragraph 19-2.2.8 for details.

## 19-13 Noise

**19-13.1 Legislation.** The Noise Control Act provides for Federal performance standards, which the Navy must incorporate into the design of new ship systems and equipment to reduce noise emission. Retrofit modifications are not prescribed for existing noise sources. Military aircraft, combat equipment and weapon systems are exempt from new product design standards. Workplace noise is not environmental noise. Reference (d) prescribes workplace noise abatement.

**19-13.2 Navy Policy.** The use of powered tools, machinery, outboard loudspeakers or any other devices that emit excessive noise, either directly or indirectly through re-radiation, shall be restricted to normal daylight working hours to the maximum possible extent.

## 19-14 Responsibilities

**19-14.1 COMNAVSEASYSCOM** shall

a. Develop, procure and install the necessary shipboard sewage systems, solid waste processing equipment, oil pollution abatement equipment and associated support designed to minimize health and safety hazards and to comply with applicable standards.

b. Develop, procure and install the necessary pollution abatement equipment and associated logistic support to allow Navy floating drydocks to operate in full compliance with guidelines and standards.

c. Continue the inspection and certification program to ensure that shipboard oil pollution abatement systems and sewage systems are properly installed and fully operational and to ensure adequate technical documentation, spare parts support and crew indoctrination are provided.

d. Provide engineering and technical assistance to the fleet, as required, to ensure the safe and effective operation of shipboard pollution abatement systems and equipment, the proper management of HM and the meeting of air pollution control requirements.

e. Provide support and hardware for shipboard environmental training programs established by CNET.

f. Acquire, distribute and install appropriate disposal and treatment systems, containers, labels, handling equipment, clean-up materials and protective clothing to allow safe and effective control of HM aboard Navy ships. Ships shall use reference (d) as guidance for proper management of HM aboard.

g. Initiate procurement procedures to ensure the major noise products and equipment, not designed for combat use, meet Federal noise emission standards.

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h. Ensure that all ships have proper material support, including adequate spare parts for installed sewage systems.

i. Ensure that associated funding requirements are properly identified, budgeted and programmed.

j. Promote research to define and study noise pollution problems unique to the Navy and coordinate such research with other DOD components and with EPA.

k. Identify, evaluate and correct Navy ships' systems and equipment that are major sources of environmental noise.

l. Develop improvements to shipboard processes to reduce the use of HM and the generation of shipboard used HM.

m. Periodically assess, by means of regularly scheduled pierside surveys, the compliance status of Navy ships regarding applicable air pollution control requirements and report all findings to commanding officers, fleet commanders and other appropriate command levels.

n. Provide assistance and guidance to fleet and shoreside NOSC's in the preparation of oil spill and HS release response plans.

o. Provide general shipboard OHS SCPs to Navy ships for use in preparation of ship-specific OHS SCPs.

R) p. Develop Shipboard OHS Spill Kits containing appropriate equipment and protective clothing for personnel use in responding to OHS spills.

q. Provide specialized equipment and trained personnel to assist NOSC's/commanding officers in responding to offshore, salvage-related and major inland oil spill and HS release response operations.

r. Provide proper reception capabilities at COMNAVSEASYSCOM facilities for receipt of ship-generated oily waste and waste oil, sewage and graywater, solid waste and used HM. This includes transfer hoses, associated fittings and adequate tank holding capacity at each COMNAVSEASYSCOM facility for all visiting ships, Navy and non-Navy.

s. Ensure that operating forces obtain adequate system documentation with particular emphasis on ensuring that the documentation contains health, sanitation, and safety guidance. Documentation shall include:

(1) Equipment technical manuals for all installed equipment/systems

(2) Maintenance Requirements Cards (MRCs) covering a comprehensive sewage system preventive maintenance program and certification criteria

(3) Sewage Disposal Operation Sequencing System (SDOSS) which consists of systematic and detailed written procedures using charts, instructions and diagrams developed for the operations of a specific ship's sewage system

(4) Reference (c), chapter 593

(5) PCB Advisories.

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t. Develop contract requirements for ship availabilities in private shipyards to process ship generated waste in compliance with the law.

u. Apply for required HW generator numbers required to manage Navy-generated and co-generated HW at private shipyards. Manage the HW manifest program and provide annual management reports to CNO and the fleets on program cost and effectiveness.

v. Develop and issue to the fleet site-specific HW management procedures for private shipyards. Provide on-site coordination from the

SUPSHIP office with the identified ship HM coordinator.

w. Identify to the type commander or type commander representative any unresolved issues of ship noncompliance with SUPSHIP-generated procedures.

**19-14.2 Chief of Naval Education and Training (CNET) shall**

a. Establish formal training programs on the operation, maintenance, sanitation and safety of all shipboard sewage systems. Monitor and update training programs as required.

b. Develop shipboard indoctrination programs on sanitation, safety and basic operation of all sewage systems. Review and revise indoctrination programs as necessary.

c. Establish formal training programs at appropriate facilities on the operation and maintenance of shipboard oil pollution abatement systems and equipment. Monitor and update training programs as required.

d. Provide shipboard indoctrination programs on oil spill control, oil reclamation and the basic operation of all oil pollution abatement systems and equipment. Review and revise indoctrination programs as necessary.

e. Establish formal training programs on the handling, storage, treatment, disposal and cleanup of shipboard oil and HS. Monitor and update training programs as required.

**19-14.3 Commander, Naval Legal Service Command** shall establish training courses on environmental compliance afloat for military lawyers assigned to afloat billets, fleet staffs and shore stations providing support to afloat units.

**19-14.4 Chief, Bureau of Medicine and Surgery (BUMED) shall**

a. Issue guidance for shipboard medical department personnel concerning health and sanitation aspects of shipboard sewage systems.

b. Ensure that training programs for shipboard medical personnel include all aspects of health and sanitation associated with shipboard sewage systems.

c. Determine, validate and establish health criteria and standards relating to chemical and physical environmental health standards.

d. Collect, evaluate and disseminate data related to health problems associated with lead and zinc chromate paint removal aboard ship.

e. Perform research and evaluation in environmental medicine to determine the health impacts of Navy sources of environmental noise.

f. Provide, at Navy ports, the required services for disposal of medical waste generated by ships and ensure that disposal ashore complies with applicable Federal, State and local laws or regulations and SOFAs or international agreements. (A

**19-14.5 Fleet CINCs shall**

a. Ensure that ships under their command are provided with appropriate sewage systems, air emission and oil pollution abatement equipment, solid waste treatment and disposal systems and low-noise emission equipment.

b. Ensure that ships under their command possess appropriate disposal/treatment systems, containers, labels, handling equipment, clean-up materials, spill kits and protective clothing to allow safe and effective control of shipboard HM.

c. Provide, at Navy ports under their command, proper facilities for receipt of ship-generated solid waste, sewage and wastewater, HM and oily waste and waste oil. Such facilities will include appropriate discharge hoses, fittings and holding capacity for wastes.

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d. Ensure that ships operate their sewage systems; air, oil and solid waste control systems; and other pollution abatement systems per the requirements of this instruction.

e. Provide for repair and maintenance of air, oil, sewage and solid waste pollution abatement systems that are beyond the capability of ship's force to accomplish.

f. Issue operational guidelines and reporting procedures for compliance with the policies set forth in this instruction for ship-generated plastic waste.

g. Predesignate fleet NOSC's.

h. Provide the names and addresses of fleet NOSC's to fleet units.

i. Fund the cleanup of OHS spills from Navy vessels under their command.

j. Ensure that assigned Navy floating drydocks possess appropriate pollution abatement systems and equipment.

k. Provide proper reception facilities at cognizant Navy ports for receipt of shipboard-generated industrial waste and sewage.

l. Ensure that assigned drydocks operate their pollution abatement systems per paragraph 19-12.2.

m. Provide for repair and maintenance of pollution abatement systems beyond the capability of assigned drydock's force to accomplish.

n. Establish procedures to ensure, to the maximum extent feasible, that used and excess HM is offloaded at a Navy or other public facility prior to a ship's entering a private shipyard for an availability. Such procedures shall include the offloading of HM not anticipated for use by ship's force during the availability.

o. Ensure that ships identify a shipboard HM coordinator to the SUPSHIP for each ship availability at a private shipyard. Ensure that this individual has the authority and resources commensurate with the assigned responsibility to ensure shipboard compliance with HM and HW management procedures and site specific management practices established by the SUPSHIP.

p. Ensure that ships identify, in preavailability planning conferences, the types and amounts of used HM anticipated by ships' force during the availabilities.

q. Direct ships to comply with all established HM and HW management practices and those site-specific procedures delineated by the SUPSHIP.

r. Ensure type commanders monitor ship compliance with established HM/HW procedures while in private shipyards.

s. Consider the protection of marine mammals during operational planning and vessel operations.

t. Inform ship commanding officers of reference (b) compliance requirements for marine coatings at Navy and commercial affected source sites activities. Promptly request marine coating reporting waivers from regional EPA offices with assistance from RECs, for operational ships arriving at naval activities that are "affected sources" sites

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**19-14.6 Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM)** shall implement programs for source reduction of plastics aboard ship by identifying non-plastic packaging products and non-plastic consumables for shipboard use.

**19-14.7 Commander Military Sealift Command (COMSC)** shall

a. Properly equip assigned ships with appropriate sewage systems, air emission and oil pollution abatement equipment, solid waste treatment/disposal systems and low-noise emission equipment.

b. Equip assigned ships with appropriate disposal/treatment systems, containers, labels, handling equipment, clean-up materials, spill kits and protective clothing to allow safe and effective control of shipboard HM.

c. Ensure that assigned ships operate installed sewage systems, air, oil and solid waste control systems and other pollution abatement systems per the requirements of this instruction.

d. Provide for repair and maintenance of air, oil, sewage and solid waste pollution abatement systems that are beyond the capability of ship's force to accomplish.

e. Issue operational guidelines and reporting procedures for compliance with the policies set forth in this instruction for ship-generated plastic waste.

f. Fund the cleanup of OHS spills from assigned Navy and contract ships.

g. Establish procedures to ensure, to the maximum extent feasible, that used HM is off-loaded from assigned ships at a Navy or other public facility before entering a private shipyard for an availability. Such procedures shall include the offloading of HM not anticipated for use by ship's force during the availability.

h. Identify a shipboard HM coordinator for each assigned ship's availability at a private shipyard. Provide this individual the authority and resources commensurate with the assigned responsibility to ensure shipboard compliance with HW management procedures and site-specific management practices established at the private shipyard.

i. Ensure that ships identify, in preavailability planning conferences, the types and amounts of HW anticipated by ships' force during the availabilities.

j. Direct ships to comply with all established HM and HW management practices and those site-specific procedures delineated for the private shipyard.

k. Monitor ship compliance with established HM/HW procedures while in private shipyards.

**19-14.8 PRESINSURV** shall

a. Conduct environmental compliance oversight inspection as a part of the regular ship inspection process. These inspections shall include equipment operation, program compliance and training.

b. Conduct 2-day "intervening" environmental protection assessments as scheduled by ISICs during an IDTC in which a underway material inspection is not conducted. Provide a letter report on results to commanding officer only. Combine data collected with that from final contract trials and underway material inspections for use by type commanders, CNO (N45), NAVSAFECEN, and environmental protection organizations.

c. Train assigned inspectors on the requirements of this chapter.

d. Report to the CNO the status of afloat environmental compliance and issues requiring CNO attention as a part of the periodic brief.

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**19-14.9 Regional Environmental Coordinators shall**

a. Coordinate with the cognizant port clearance authority to ensure LOGREQ replies fully apprise arriving ships of local environmental requirements and port practices.

b. Notify the cognizant area environmental coordinator and CNO (N45) in advance when anticipating regulatory concern over arriving ship environmental compliance. Recommend a course of action to resolve the issue.

c. Maintain close liaison with SUPSHIP offices and naval shipyards to ensure proper resolution of environmental issues regarding ships in overhaul.

d. Report to CNO (N00N) and COMNAV-SEASYSOM (SEA-08) any regulatory attempt to assert authority over radioactive or non-radioactive discharges from naval nuclear propulsion plants.

e. Upon request, assist both U.S. and foreign Navy ships in resolving environmental issues, including but not limited to inspection of ships, air emissions, water discharges, oil spill planning and response and natural resource damage assessments following oil spills.

f. Provide information on the Federal, State and local environmental regulations that apply to ships in port. Such information shall describe necessary actions by ship commanding officers to comply with the requirements of this instruction and all other Federal, State and local regulations applicable to the port.

**19-14.10 Commanding officers of Navy ships and masters of MSC vessels shall**

a. Obtain certification and recertification for, properly operate, periodically inspect and properly maintain the ship's sewage and oil pollution abatement systems. Carry out ship-to-shore

transfers of sewage and graywater in a safe and effective manner.

b. Operate and maintain his or her ship to conform with applicable State and local air pollution emission regulations and HM regulations.

c. Ensure that ships comply with the guidelines, standards and procedures of this instruction.

d. Dispose of no medical materials in a manner that poses a risk or perception of a risk to the public health and welfare or to the marine environment.

e. Complete and document training of shipboard personnel as prescribed in paragraphs 19-2.2.7, 19-3.4, 19-4.3.3, 19-5.5, 19-6.5, 19-7.4, 19-8.4 and 19-9.3.

f. Schedule periodic inspections (at least quarterly) per reference (j) by senior medical department personnel to maintain sanitary and hygienic conditions of MSD systems and operational practices. Sanitation and hygiene inspections should also be made of solid waste processing equipment (when installed and operating).

g. Post appropriate health and sanitation precautions as required by reference (d); General Specifications for Ships of the United States Navy (GENSPECS); reference (c), chapter 593; and reference (j).

h. Report, as required and established by the chain of command, sewage discharge within 0-3 nm from U.S. shores.

i. Report to the fleet commander any conditions or system/equipment malfunctions that could result in unlawful air pollutant emissions.

j. Report to the fleet commander any conditions or system/equipment malfunctions that would necessitate oily waste, HM or solid waste discharge into waters in which discharge is restricted.

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k. Ensure that the engineering log or equivalent oil record book records any oily waste discharge that causes a sheen. When a sheen-producing discharge occurs, determine the cause. Record keeping shall consist of the date, time of occurrence, ship location at the beginning and end of the incident, substance discharged, quantity discharged and the cause of the discharge.

l. Designate an officer as HM coordinator to ensure that all shipboard personnel comply with reference (d) requirements for HM handling, packaging, storing, labeling, treating and disposal. Prior to the ship leaving port, the HM coordinator shall reconcile all HM left on the pier.

R) m. Predesignate one or more shipboard action officers to be responsible for shipboard spill/release contingencies planning and response.

R) n. Prepare shipboard OHS SCPs and coordinate with the cognizant NOSC plan. Provide these plans to Coast Guard and State officials for information, upon request.

R) o. Properly train shipboard personnel and make them fully aware of applicable OHS SCPs. Conduct required OHS spill drills.

R) p. Report OHS spills as prescribed in paragraph 19-9.2.5 through 19-9.2.8.

R) q. Take immediate actions to contain, control and mitigate all spills caused by the ship.

r. Appoint an officer or petty officer to oversee drydock operations to ensure that industrial waste and sewage collection and treatment systems are properly operated and maintained and that ship-to-shore transfers of the waste are handled in a safe and effective manner.

s. Offload used and excess HM, to the maximum extent feasible, to a Navy or other public facility prior to entering a private shipyard for an availability. Also offload HM not anticipated

for use by ship's force during the availability before entering the private shipyard.

t. Identify to the SUPSHIP responsible for a private shipyard the ship's HM coordinator for the availability. Provide that individual the authority and resources to ensure shipboard compliance with HW management procedures and site-specific management practices established by the SUPSHIP.

u. Identify to the SUPSHIP, in preavailability planning conferences, the types and amounts of used HW anticipated by ship's force during the availability.

v. Comply with all established HM and HW management practices and those site-specific procedures delineated by the SUPSHIP.

w. During paint removal operations, to the maximum extent feasible, collect the debris, dust and residual materials from the paint removal operation and properly package them for disposal ashore.

x. Report to the chain of command, cognizant REC, area environmental coordinator and CNO (N45) any regulatory request that the Navy apply for permits involving ship discharges or implement measures regarding ship discharges beyond the requirements contained in this chapter. Enter into no agreements with environmental agencies regarding ship discharges without CNO (N45) approval.

y. If it is necessary to load ballast water in a potentially polluted area or within 3 nm from land (i.e., amphibious ships operating in such waters and ballasting to operate landing craft or tankers ballasting to replace offloaded cargo), offload the water outside 12 nm from shore and take on clean sea water and discharge it twice prior to entry within 12 nm from shore. This action need not be taken during local operations in which the ballast water may be discharged into essentially the same waters. Record in the ship's engineering log the

loading of ballast water in potentially polluted areas or within 3 nm from shore and the flushing of ballast tanks to rid them of possible pollutants or unwanted species. The entry should include the geographical position and the amount of ballast water taken on.

R) z. Properly enter reports of all plastic discharges in the deck log. Personally approve any plastic discharges.

aa. Avoid deliberately harassing marine mammals. Consider marine mammal protection during ship operations and planning.

bb. Ensure that the requirements of references (d) and (h) are followed for all activities associated with PCBs, PCB-containing materials or systems potentially contaminated with PCBs (e.g., ventilation systems that employ PCB-containing felt gaskets).

R) cc. Assign a crewmember as the AEPC. Train the AEPC per paragraph 19-2.2.7c.

A) dd. Maintain records of ships' force marine coating use for coatings distributed from ships' stores for domestic Navy and commercial affected source sites, as appropriate. Deliver a monthly report of daily coating use by the seventh day of the month following use or before departure, if departing before the end of the month or after a short visit (i.e. several days). Deliver the report to the affected source site Navy shore activity or, when located at a commercial affected source site, to the appropriate SUPSHIP office.

A) ee. Use only marine coatings that meet VOC content standards of reference (c), chapter 631, table 3-7. These coatings are compliant with reference (b). When approved marine coatings are not available or there is uncertainty whether a material is regulated under reference (b), contact COMNAVSEASYS COM (SEA03M) for information on compliant substitutes. Remove non-compliant coatings from shipboard stores and re-

turn them to the supply system as excess HM as soon as possible.

ff. Prohibit the thinning of marine coatings with materials such as coating thinners, solvents, and varnishes. Label paint lockers with a placard stating, "Thinning of marine coatings/paints is prohibited." (A)

gg. Implement the following marine coating work practices: (1) minimize spills of marine coatings, (2) use intact and leak-free marine coating containers and (3) close marine coating containers when not in use. (A)

#### **19-14.11 Commanding officers of floating dry-docks shall**

a. Appoint an officer or petty officer to ensure that drydock personnel properly operate and maintain oil and oily waste collection and treatment systems and that they safely and effectively handle ship-to-shore transfers of the waste.

b. Properly train drydock personnel working with oil pollution systems, send them to appropriate schools, and fully document this training.

c. Coordinate with the shore activity commanding officer to ensure compliance with State or local regulatory requirements.

d. Report to the fleet commander any conditions or system/equipment malfunctions that would necessitate solid waste discharge upon or into restricted waters.

e. Properly operate drydock systems for the collection and transfer of sewage and wastewater from the ship in drydock to shoreside receiving facilities. Periodically inspect and properly maintain the systems. Handle transfers of sewage and wastewater in a safe and effective manner. Reference (c), chapter 593; GENSPECS, section 593; and reference (e) provide guidance concerning CHT systems.

f. Ensure discharges from floating drydocks are permitted as required.

**19-14.12 Fleet NOSCs shall**

a. Develop fleet SCPs.

b. Provide coordination and direction for the cleanup of OHS spills from Navy ships outside the U.S. contiguous zone.

c. Provide coordination and assistance, as requested, to predesignated shoreside NOSCs assigned in chapter 10.

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## CHAPTER 21

### OCEAN DUMPING

#### 21-1 Scope

This chapter identifies requirements and responsibilities for ocean disposal of material, other than dredged or fill material (see Chapter 7) and those discharges covered in Chapter 19.

##### 21-1.1 References. Relevant references are:

- a. 33 CFR 324, Permits for Ocean Dumping of Dredged Material;
- b. 40 CFR 220-225, 227-229, Ocean Dumping Regulations and Criteria;
- c. NAVMEDCOMINST 5360.1 of 17 September 1987, Decedent Affairs Manual; (NOTAL).

#### 21-2 Legislation

**21-2.1 Marine Protection, Research, and Sanctuaries Act (MPRSA).** Bars the transport of any material from the U.S. for the purpose of dumping into the ocean waters without a permit issued by the Environmental Protection Agency (EPA), and dumping material from outside the U.S. within the territorial sea or contiguous zone. The primary means of regulation is a Federal permit system; violations carry civil penalties of \$50,000 per violation, and criminal penalties of one year imprisonment and/or \$50,000 fine.

**21-2.2 Ocean Dumping Act.** Prohibits the transportation of material from the U.S. or any other location for the purpose of ocean dumping unless an EPA permit has been obtained. Violation of this requirement is punishable under Federal law. In practical terms, this Act requires that trash

and garbage generated in port be off-loaded for shore disposal before getting underway. It also means that wastes generated during exercises ashore cannot be loaded aboard ships for subsequent ocean disposal.

#### 21-3 Terms and Definitions

**21-3.1 Dumping.** The intentional disposition of wastes generated ashore or materials unloaded in port for the express purpose of disposal at sea. Does not include routine discharge of materials or wastes generated on board ship and/or effluent incidental to the propulsion or operation of motor driver equipment on vessels. It does, however, include the discharge of contaminated material, including bilge water, received from another ship or shore source.

**21-3.2 Material.** Matter of any kind or description, including, but not limited to, solid waste, incinerator residue, garbage, sewage, sewage sludge, munitions, radiological, chemical and biological warfare agents, and discarded equipment, but does not include sewage from vessels processed through an approved marine sanitation device (MSD) as described in Chapter 19.

**21-3.3 Ocean Waters.** Waters seaward of the baseline from which the boundary of the territorial sea is measured.

#### 21-4 Requirements

Unless specifically permitted, dumping of material in ocean waters is prohibited without a permit.

#### 21-5 Navy Policy

1 November 1994

## **21-5.1 Ocean Dumping**

**21-5.1.1** Ocean dumping may only be authorized on a case-by-case basis by Chief of Naval Operations (CNO) (N43). Except in emergency conditions, requests for such authorization shall be accompanied by documentation per the criteria established in reference (b). Following CNO approval, full compliance with EPA permitting procedures is required.

**21-5.1.2** Any material may be dumped from ships and aircraft in an emergency to safeguard life at sea.

## **21-5.2 Transport of Target Vessels**

**21-5.2.1** The transportation of naval ships and craft from the U.S. or from any other location for the purpose of conducting a sinking exercise (SINKEX) concerning tests and evaluations of conventional ammunition and weapons systems is subject to EPA permit requirements.

**21-5.2.2** Necessary measures shall be taken to ensure that the vessel sinks to the bottom rapidly and permanently and that marine navigation is not impaired by the sunken vessel.

**21-5.2.3** All such vessel sinkings shall be conducted in water of at least 1,000 fathoms (6,000 feet) and at least 50 nm from land, as measured from that portion of the baseline from which any territorial sea is measured (as provided for in the Convention on the Territorial Sea and the Contiguous Zone) that is the closest proximity to the proposed disposal site.

**21-5.2.4** Under permit conditions and before sinking, appropriate measures shall be taken by qualified personnel at a Navy or other appropriate facility to remove, to the maximum extent practicable, all materials that may degrade the marine environment, including, but not limited to:

a. Emptying of all fuel tanks and lines to the lowest point practicable, flushing of such tanks and

lines with water, and again emptying such tanks and lines to the lowest point practicable so that tanks and lines are essentially free of petroleum.

b. Removing from the hulls other pollutants and all readily detachable material capable of creating debris or contributing to chemical pollution.

**21-5.2.5** Each SINKEX operation shall be conducted only after approval by CNO (N43) and preparation of the target per the EPA permit and specific OPNAV directives.

**21-5.2.6** Requests for conducting SINKEX exercises shall be forwarded via chain of command to CNO (N43) on a case-by-case basis and shall include:

- a. User activity
- b. Requirements for, or purpose of the sinking
- c. Designated target hulls and approximate tonnage
- d. Statement that the designated hull has been prepared per the specification of paragraph 21-5.2.4
- e. Approximate date and location of the sinking.

**21-5.2.7** After the sinking, a report (Report Symbol OPNAV 5090-12) shall be made to CNO (N43) (copies to N44, N45, and appropriate fleet and force commanders) with the name of each vessel sunk, approximate tonnage, and the location and date of sinking.

## **21-5.3 Burial at Sea**

**21-5.3.1** The EPA has granted a general permit to transport human remains from any location for the

purpose of burial at sea and to bury such remains at sea.

**21-5.3.2** Human remains shall be prepared for burial at sea and be buried per Chapter 8 reference (c). (Report Symbol OPNAV 5090-9).

**21-5.3.3** For non-cremated human remains, burial at sea shall take place no closer than 3 nm from U.S. land and 12 nm from foreign land and in water of no less than 100 fathoms (600 feet) depth. All necessary measures shall be taken to ensure that the encased remains sink to the bottom rapidly. For purposes of this paragraph, "land" means that portion of the baseline from which any territorial sea is measured (as provided for in the Convention on the Territorial Sea and the Contiguous Zone) that is in closest proximity to the proposed disposal site.

**21-5.3.4** Cremated remains shall be buried in or on ocean waters without regard to the depth limitations specified above, provided that such burial take place no closer than 3 nm from U.S. land and 12 nm from foreign land.

## **21-6 Responsibilities**

**21-6.1** CNO (N43) shall prepare and submit an annual report to the EPA Administrator setting forth the name of each vessel sunk as a target, its approximate tonnage, and the location and date of sinking (Report Symbol OPNAV 5090-12).

**21-6.2** COMNAVFACENGCOM shall provide technical assistance to Navy commands, vessels, and activities, as requested, in matters concerning ocean dumping.

**21-6.3** Fleet Commanders in Chief shall:

a. Ensure that all naval vessel and shore activity commanders comply with the policies and criteria as stated herein.

b. Ensure that ship sea detail checklists

include a requirement to collect and offload all trash and garbage before getting underway.

c. Ensure that planning for exercises includes provisions for appropriate disposal of wastes generated ashore during the exercise.

**21-6.4** Commanding officers of a vessel or aircraft conducting burials at sea shall report within 30 days the date, longitude and latitude, number, and type of burial (whole body or cremated remains) to the fleet commander in chief (CINC), with copies to the type commander and the regional environmental coordinator.

**21-6.5** Area environmental coordinators shall submit a monthly report to the appropriate EPA regional office detailing all burials at sea conducted during the previous 30 days.

**21-6.6** Commanding officers of ships shall, prior to getting underway from port, see that all trash and garbage is collected and off-loaded. This requirement shall be included in the ship's sea detail checklist.

## CHAPTER 24

### ENVIRONMENTAL AND NATURAL RESOURCES TRAINING

**R) 24-1 Scope**

This chapter directs environmental and natural resources training required for Navy personnel (including military personnel and civilian employees of non-appropriated fund activities), to accomplish all Navy missions in an environmentally responsible manner, and to comply with Federal, State, and local laws and regulations. This chapter provides Navy policy regarding environmental and natural resources training, and a plan for implementing it. Environmental training courses described in this chapter are official courses for the training of Navy personnel. Specific training mandated by law or regulation is included in individual technical chapters, as applicable.

A) We revised this chapter concurrently with the development of the Environmental and Natural Resources Program (ENRP) Navy Training System Plan (NTSP) (reference (a)). It reflects the environmental training strategy of the NTSP. The NTSP, in turn, develops and programs the personnel, courses, training aids, etc. required to support this directive.

A) We developed training requirements by researching laws, regulations, and directives in response to Fleet requirements; and in response to guidance provided by the Chief of Naval Operations (CNO), Environmental Quality Management Board (EQMB), and the ENRP NTSP Steering Committee.

A) This chapter is applicable to shore and afloat commands (including aviation commands) for the training, briefing, and orientation of personnel assigned environmental responsibilities. Additionally, it directs all hands training, so that newly reporting personnel are provided with a meaningful environmental and natural resources summary.

Consider Civil Service masters of Military Sealift Command (MSC) ships as commanding officers regarding all training requirements, unless otherwise directed by Commander, Military Sealift Command (COMSC). The chapter also provides broad guidance for the training of Naval Reservists.

Commanding officers should note that formal school training does not eliminate the requirement for a comprehensive command environmental and natural resources training program. (R)

#### 24.1.1 Navy Policy

The training courses described in this chapter are the only formal, Navy environmental training courses. The Navy discourages the use of locally available, non-standard courses as they do not promote implementation of identical environmental policy and standards Navy-wide. Ad Hoc and informal environmental training must be reviewed through the sub committees (ISEERB PILLAR SUB COMMITTEE), and the working groups afloat and ashore. These committees are responsible for advising CNET, NAVSCOLCEC-OFF and NAVOSHENVTRACEN of emergent course requirements as well as changes to existing requirements. (R)

The Navy's policy regarding environmental and natural resources training is:

a. To provide all Navy personnel, military and civilian, active duty and reserve, with quality initial training and annual refresher training.

b. To accomplish officer and enlisted environmental awareness training during initial accession training.

c. To conduct training required for a specific billet or assignment en route to the assignment, or as soon thereafter as practicable.

d. To provide training that is both command-specific and general.

e. To stress the roles and responsibilities of the individual as well as the command during environmental and natural resources training.

f. To emphasize that compliance with Federal, State, and local laws and regulations is mandatory, and that failure to comply may result in civil penalties being imposed against the command. Moreover, some violations may subject individuals as well as commands to disciplinary action by the Navy, or to civil or criminal penalties imposed by Federal or State courts or regulators.

A) g. Naval Reserve commanders and commanding officers shall work closely with active duty counterparts to provide appropriate environmental and natural resources training for Naval Reservists.

h. Commands shall conduct environmental and natural resources training needs assessment surveys as required to evaluate training effectiveness and to identify areas for additional training

i. Per NTSP, commands shall obtain required training through Navy sources unless:

(1) A specific course is unavailable through Navy sources, or

(2) A commercially available course equivalent to a Navy source course, is more economical (i.e., cost of travel, per diem, etc.).

#### **24-1.2 References.** Relevant references are:

a. N45-NTSP-X-10-96-01, Environmental and Natural Resources Navy Training System Plan; (NOTAL);

b. OPNAVINST 5100.19C, Navy Occupational Safety and Health Program Manual for Forces Afloat; (NOTAL);

c. OPNAVINST 5100.23D, Navy Occupational Safety and Health Program Manual; (NOTAL).

#### **24-2 Legislation**

Environmental laws or implementing regulations specify certain training requirements. Additional training requirements exist, not specifically required by the laws or regulations, because untrained personnel probably cannot comply with requirements unless they receive them.

#### **24-3 Terms and Definitions**

There are no terms specifically applicable to this chapter.

#### **24-4 Environmental Training Requirements**

**24-4.1 General Environmental Awareness Training.** Commanders and COs shall conduct general environmental awareness training annually for all hands afloat and ashore, and include:

a. The Navy's Environmental and Natural Resources Program and policy.

b. Navy environmental and natural resources initiatives, and the impact of these initiatives on the individual.

c. The role of the individual in achieving Navy environmental and natural resources compliance.

d. Pollution prevention and recycling.

e. Environmental planning and assessment as required by NEPA and Executive Order (E.O.) 12114 (for shore personnel only).

f. Consequences of non-compliance.

The Navy produces and provides environmental awareness training videotapes and accompanying user's guides as well as computer-based training modules for distribution to all commands. Commands should use these videos to assist in accomplishing general environmental awareness training.

R) **24-4.2 Command Orientation.** Commanders and COs shall provide each individual reporting to a command with command-specific environmental awareness training, as part of the Command Orientation Program, including a survey of the following topics:

a. The command's commitment to a strong, protective environmental ethic and stewardship of natural resources.

b. The command's specific environmental responsibilities and its accompanying environmental awareness and compliance programs, including employee liability (shore personnel only) and protection of natural resources, pollution prevention, recycling, and hazardous material control and management (HMC&M).

c. The responsibility, commitment, and contribution of the individual to the environment.

d. The command's environmental points of contact and telephone numbers and emergency telephone numbers.

e. Federal, State, and local environmental laws and regulations (shore personnel only).

#### **24-4.3 Specialty Training.**

**24-4.3.1 Surface warfare officers.** Surface warfare officers shall receive environmental and pollution prevention training through the Surface Warfare Officers' School Command (SWOSCOL-COM) as part of their curriculum. (A)

**24-4.3.2 Supply officers.** Supply officers shall receive environmental training at the Naval Supply Corps School as part of an appropriate curriculum. (A)

**24-4.3.3 Naval aviators.** Naval aviators shall receive environmental compliance and pollution prevention training as part of flight training, or soon thereafter. Embarked squadrons or detachments shall participate in their ship's training program. (A)

**24-4.3.4 Submarine officers.** Submarine officers shall receive environmental compliance and pollution prevention training at the earliest opportunity as part of prospective commanding officer or prospective executive officer (PCO/PXO), department head (D.H.), and basic submarine officer training. (A)

**24-4.3.5 Navy Judge Advocate General (JAG) officers.** JAG officers shall receive environmental training in the Staff Judge Advocate Course at Naval Justice School. (A)

**24-4.3.6 Afloat Environmental Protection Coordinators (AEPC)** AEPCs shall attend the Afloat Environmental Protection Coordinator course (A-4J-0021) or equivalent. They shall complete Watchstation 304 in the Hazardous Material (HM)/Environmental Protection Programs Afloat Personnel Qualification Standards (PQS), (NAVEDTRA 43528), within 6 months of assignment. One petty officer per firefighting or repair party shall qualify on Watchstation 303 - HM Spill Response Scene Leader. One petty officer will also qualify as Watchstation 305 - Oil/Hazardous Spill Response Scene Leader (NAVEDTRA 43528). For submarines, type

commanders shall specify requirements for completion of PQS 303 and 305, such that appropriately qualified individuals shall be present at the scene of any HM or oil spill. For MSC ships, COMSC shall specify AEPC requirements.

- A) **24-4.4 Shipboard Training Enhancement Program (STEP).** STEP is a program of computer-based training used in Navy shipboard training as an alternative to formal, classroom training, and to satisfy course completion requirements. Testing is included in STEP to evaluate student understanding of the material. STEP courses have the potential for effectively and economically delivering environmental and natural resources training.

- A) **24-4.5 Billets Requiring Billet-Specific Environmental Training.** Navy personnel ashore and afloat will receive billet specific environmental training for the following:

Regional Environmental Coordinator (RECs)  
Commanding Officers and Executive Officers

Commander's Staff  
Supply Officers  
Public Affairs Officers (Ashore)  
ROICC/OICC  
Afloat Environmental Coordinators  
Public Works Officers  
Environmental Managers, Engineers, and Planners  
Natural and Cultural Resources Managers  
Installation Restoration Personnel  
Environmental Staff Personnel  
Response Personnel  
IMA Asbestos Removal  
IMA Asbestos Removal  
Hazardous waste site workers or other personnel working with refrigerants.  
Industrial Hygiene Officer  
Safety Officer

**24-4.6 Billet-Specific Formal Environmental Training Courses.** Following are the Navy environmental training courses available through the

Navy Occupational Safety and Health and Environmental Training Center (NAVOSH-ENVTRACEN), Norfolk, VA and through the Naval School Civil Engineer Corps Officer school (NAVSCOLCECOFF), Port Hueneme, CA. Commands desiring course quotas should contact those schools directly.

a. NAVOSHENVTRACEN Courses:

Afloat Environmental Protection Coordinator (A-4J-0021)

IMA Asbestos Removal (A-493-0069)\*

IMA Asbestos Removal Refresher (A-493-0070)\*

CHRIMP/HICS Workshop

Oil On-Scene Operations Team

Navy On Scene Commander (NOSC)/Facility Incident Commander (FIC)

Hazardous Substance Incident Response Management (HSIRM) (A-493-0077).

Hazardous Material Supervisor (A-322-0010)\*

Hazardous Material Coordinator (A-8B-008)\*

\* Occupational Safety and Health (OSH) Courses of environmental interest

b. NAVSCOLCECOFF Courses:

Environmental Protection (A-4AP-0036)

Advanced Environmental Protection (A-4A-0063)

Executive Environmental Seminar for CO/XO (A-4A-0054)

PWO Senior Environmental Forum (A-4A-0059)

Environmental Law for Non-Lawyers (A-4A-0058)

Advanced Environmental Law for Non-Lawyers Seminar

Environmental Negotiation

RAC Field Administration and Technology - (A-4A-0061)

(A) Navy Environmental Restoration Implementation (A-4A-0064)

Quality Assurance in Environmental Analysis

Quality Assurance in Field Screening, Sampling, and Analysis

HAZWOPER - Site Worker

HAZWOPER - Site Worker Refresher

HAZWOPER For Uncontrolled HW Sites, for Supervisors

Hazardous Waste Facility Operators

Hazardous Waste Generators

Hazardous Waste Annual Refresher

NEPA Executive Overview

Historic Preservation Compliance Executive Overview

Historic Preservation Law and Section 106 Compliance

Introduction to Cultural Resources

Management Laws and Regulations.

c. Interservice Environmental Education Review Board (ISEERB)/NAVSCOLCECOFF Courses:

NEPA Application

Environmental Risk Communication and Public Dialogue

Natural and Cultural Resources Compliance

Natural and Cultural Resources Management

Pollution Prevention Tools, Techniques, and Technologies

Air Quality Management

Air ODS Certification

Pollution Prevention Program Operations and Management

Environmental Audit.

A) **24-4.7 Regional Environmental Coordinators (RECs).** Regional Environmental Coordinators will receive the following formal training:

a. Executive Environmental Seminar for CO/XO

b. Environmental Law for Non-Lawyers

c. Advanced Environmental Law For Non-Lawyers

d. Environmental Negotiation

e. NEPA Executive Overview.

**24-4.8 Commanding Officers of Shore Activities.** (A Personnel assigned command of shore activities (including shore-based aviation commands) will receive general and command-specific training on Federal, State, and local environmental compliance laws and regulations within 6 months of taking command, as follows:

a. Environmental Negotiation

b. NEPA Executive Overview

c. Historic Preservation Compliance Executive Overview.

**24-4.9 Commander's Staff (Deputy Commanders, and Key Major Staff).** (A Deputy commanders and senior personnel assigned environmental responsibilities on major claimant staffs will receive the following training, as appropriate:

a. Advanced Environmental Protection

b. Environmental Law For Non-Lawyers

c. Advanced Environmental Law for Non-Lawyers

d. NEPA Executive Overview

e. Historic Preservation Compliance Executive Overview

f. Environmental Risk Communication and Public Dialogue

g. Pollution Prevention Program Operations and Management

h. Environmental Audit.



- A) **24-4.10 Supply officers whose duties involve hazardous material control and management** will attend the CHRIMP/HICS Workshop.
- A) **24-4.11 Public Affairs Officers.** Public affairs officers assigned to shore activities will receive both general and command-specific training on environmental compliance laws and regulations, including:
- a. Environmental Protection
  - b. Environmental Law for Non-Lawyers
  - c. NEPA Executive Overview
  - d. Historic Preservation Compliance Executive Overview
  - e. Environmental Risk Communication and Public Dialogue.
- R) **24-4.12 Resident Officers in Charge of Construction/Officers in Charge of Construction (ROICC/OICC).** ROICC/OICC training will include:
- a. RAC Field Administration
  - b. HAZWOPER - Site Workers
  - c. HAZWOPER - Site Workers Refresher
  - d. HAZWOPER - For Uncontrolled HW Sites, Supervisors
  - e. Historic Preservation Law and Section 106 Compliance
  - f. Introduction to Cultural Resources Management Laws and Regulations
  - g. Natural and Cultural Resources Compliance
  - h. Natural and Cultural Resources Management.
- 24-4.13 Public Works Officers (PWO).** Civil Engineering Corps (CEC) officers assigned as public works officers will receive the following training:
- a. PWO Senior Environmental Forum
  - b. Historic Preservation Compliance Executive Overview
  - c. NEPA Application.
- 24-4.14 Civil Engineering Corps (CEC) Officers.** CEC officers will receive the following training:
- a. Advanced Environmental Protection
  - b. Environmental Law for Non-Lawyers.
- 24-4.15 Environmental Managers.** Environmental managers will receive training appropriate to duties assigned, including the following formal courses, as applicable. Provide training before assignment of environmental project or program management responsibilities:
- a. Environmental Protection
  - b. Advanced Environmental Protection
  - c. Executive Environmental Seminar for CO/XO
  - d. PWO Senior Environmental Forum
  - e. Environmental Law for Non-Lawyers
  - f. Advanced Environmental Law for Non-Lawyers
  - g. Environmental Negotiation
  - h. Hazardous Waste Facility Operators
  - i. Hazardous Waste Annual Refresher
  - j. NEPA Executive Overview

k. Historic Preservation Compliance Executive Overview

l. Historic Preservation Law and Section 106 Compliance

m. Introduction to Cultural Resources Management Laws and Regulations

n. NEPA Application

o. Air Quality Management

p. Environmental Audit.

A) **24-4.16 Environmental Engineers.** Environmental engineers and environmental protection specialists advise on all environmental matters and ensure command compliance. They will receive the following training as applicable, prior to assignment of environmental project or program management responsibilities:

a. Environmental Protection

b. Advanced Environmental Protection

c. Environmental Law for Non-Lawyers

d. Advanced Environmental Law for Non-Lawyers

e. Environmental Negotiation

f. NEPA Executive Overview

g. Historic Preservation Law and Section 106 Compliance

h. Introduction to Cultural Resources Management Laws and Regulations

i. Pollution Prevention Tools, Techniques, and Technologies

j. Pollution Prevention Program Operations and Management

k. Environmental Audit.

**24-4.17 Environmental Planners.** Command environmental planners will receive the following training as applicable to specific job assignments: (A

a. Environmental Protection

b. Environmental Negotiation

c. NEPA Executive Overview

d. Historic Preservation Law and Section 106 Compliance

e. Introduction to Cultural Resources Management Laws and Regulations

f. NEPA Application

g. Environmental Risk Communication and Public Dialogue

h. Natural and Cultural Resources Compliance

i. Natural and Cultural Resources Management.

**24-4.18 Natural and Cultural Resources Managers.** Personnel assigned natural and cultural resources management responsibilities will receive the following training as applicable to their specific job assignments: (A

a. Environmental Protection

b. Environmental Law for Non-Lawyers

c. Advanced Environmental Law for Non-Lawyers

d. Environmental Negotiation

e. NEPA Executive Overview

- f. Historic Preservation Law and Section 106 Compliance
- g. Introduction to Cultural Resources Management Laws and Regulations
- h. NEPA Application
- i. Environmental Risk Communication and Public Dialogue
- j. Natural and Cultural Resources Compliance
- k. Natural and Cultural Resources Management
- l. Environmental Audit.

A) **24-4.19 Installation Restoration Managers.** Personnel assigned to duties involving installation restoration or remediation will receive the following training, as applicable to their specific job assignments:

- a. Environmental Protection
- b. Advanced Environmental Law for Non-Lawyers
- c. Environmental Negotiation
- d. RAC Field Administration
- e. Navy Installation Restoration Implementation
- f. QA in Environmental Analysis
- g. QA in Field Sampling, Screening, and Analysis
- h. HAZWOPER for Site Workers
- i. HAZWOPER For Site Workers - Refresher

- j. HAZWOPER for Supervisors
- k. Hazardous Waste Facility Operators.

**24-4.20 Environmental Staff.** COs and commanders will provide personnel, not otherwise described above and assigned general environmental staff or support duties, with the following training, as applicable to their specific duties and billet assignment: (A

- a. Oil On-Scene Operations Team
- b. Navy On Scene Commander or Facility Incident Commander (NOSC)/ (FIC)
- c. Environmental Protection
- d. Environmental Negotiation
- e. RAC Field Administration
- f. Navy Installation Restoration Implementation
- g. QA in Environmental Analysis
- h. QA in Field Sampling, Screening, and Analysis
- i. HAZWOPER For Site Workers
- j. HAZWOPER For Site Workers - Refresher
- k. Hazardous Waste Facility Operators
- l. Hazardous Waste Annual Refresher
- m. Introduction to Cultural Resources Management Laws and Regulations
- n. NEPA Application
- o. Pollution Prevention Tools, Techniques, and Technologies
- p. Air Quality Management

q. Pollution Prevention Program Operations & Management

r. Environmental Audit.

A) **24-4.21 Incident Responders.** Designated incident responders (military and civilian) will receive the following training, as appropriate:

a. Oil On-Scene Operations Team

b. Navy On Scene Commander or Facility Incident Commander (NOSC)/(FIC)

c. Hazardous Substance Incident Response Management

d. Hazardous Waste Facility Operators

e. Hazardous Waste Annual Refresher.

A) **24-4.22 Supervisors.** COs will ensure personnel assigned to supervisory positions involving asbestos removal receive the following environmental training as appropriate:

a. IMA Asbestos Removal\*

b. IMA Asbestos Removal Refresher.\*

\* Occupational Safety and Health (OSH) Courses of environmental interest.

**24-4.23 Workers.** Workers assigned asbestos removal tasks will receive the following formal training:

a. IMA Asbestos Removal\*

b. IMA Asbestos Removal Refresher.\*

\* Occupational Safety and Health (OSH) Courses of environmental interest.

**24-4.24 Other.** Environmental training (along with awareness training) is necessary for other positions at shore commands, in which work practices have a significant potential impact on the environment. Law requires commanding officers to provide the following training to these personnel, as appropriate:

a. HAZWOPER For Site Workers

b. HAZWOPER For Site Workers Refresher

c. Hazardous Waste Generators

d. Air ODS Certification.

**24-4.25 Reserve Component Environmental Training.** (A) Commanders and COs of Naval Reservists will provide environmental training appropriate for mobilization duties to the greatest extent possible. Naval Reserve unit commanders and COs will obtain training for reservists that they consider the minimum for individual mobilization missions and responsibilities.

**24-5 Responsibilities** (D)

**24-5.1 The Chief of Naval Operations (CNO (N45))** will: (R)

a. Establish policy for the accomplishment of environmental and natural resources compliance training in the Navy.

b. Act as the Resource Sponsor for Navy environmental and natural resources compliance training.

c. Work with the other Armed Services in the development and conduct of environmental training.

R) **24-5.2 The Chief of Naval Education and Training (CNET) will:**

a. Develop and recommend sources to obtain training in each of the environmental topics for personnel identified in this chapter.

b. Determine equivalent sources of training, if any, for those training courses specified in this chapter. Maintain a list of equivalent training courses and training resources and distribute Navy-wide.

c. Establish formal training programs on the operation and maintenance of all environmental compliance systems and equipment developed for use aboard Navy ships.

d. Develop, budget for, and carry out the Navy Environmental and Natural Resources Program Navy Training System Plan.

e. Oversee development of standard lesson plans, audio-visual aids, and computer-based training packages to assist commands in establishing effective environmental general and orientation training programs.

f. Develop a program to measure the effectiveness of the training, identify shortfalls, and provide for response to those shortfalls, to correct them quickly.

**24-5.3 Commander, Naval Legal Service Command will:**

a. Ensure that effective environmental and natural resources compliance training for military lawyers is developed and maintained.

b. Develop, budget for, and carry out the Environmental and Natural Resources Navy Training System Plan, as it pertains to military lawyers.

c. Continually review the effectiveness of environmental training for military lawyers, and make recommendations to CNO (N45) for incorporation into the Environmental and Natural Resources Navy Training System Plan.

**24-5.4 Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM) will:**

a. Provide technical guidance to CNET on environmental and natural resources training, existing laws and regulations, actual experiences (lessons learned), and comments.

b. Provide technical guidance on environmental and natural resources training to CNO (N45).

c. Assist in the development of environmental and natural resources compliance training in the Navy.

**24-5.5 Major Claimants will:**

(R)

a. Ensure the development and implementation of effective environmental and natural resources training programs at both shore and afloat commands within their claimancies, providing amplifying guidance in support of this directive as required.

b. Ensure suitable personnel receive environmental audit training.

c. Monitor and fund the conduct of the training required per this chapter.

d. Coordinating with CNET, develop standard environmental and natural resources compliance orientation packages tailored for commands under their claimancies.

e. Provide comments to CNET on environmental and natural resources training needs.

f. Coordinate with RECs to consolidate environmental training and work towards reducing duplication of effort within a region.

**24-5.6 Commanders and Commanding Officers will:**

a. Comply with the training requirements of this chapter, and amplifying guidance from major claimants. Request funding or billet support as required.

b. Carry out effective command general and orientation training programs.

c. Provide feedback on the adequacy and effectiveness of training received via the chain of command.

**24-5.7 Regional Environmental Coordinator will:**

a. Coordinate regional training requirements, and needs.

b. Coordinate with CNET schools (NAVSCOLCECOFF/NAVOSHENVTRACEN) to establish regional training classes that can be attended by multiple activities and installations.

c. At the invitation of the chairperson, Environmental Natural Resources Program Steering Committee, attend the steering committee meeting and advise the committee as to the status of environmental training in specific regions.

d. Coordinate with major claimants to consolidate environmental training and work towards reducing duplication of effort within regions.

e. Coordinate State specific training.

f. Provide recommendations and feedback to ISEERB regarding specific emergent issues and training requirements.

## APPENDIX A

### PERTINENT LAWS, EXECUTIVE ORDERS, REGULATIONS, AND DIRECTIVES

#### PART 1

#### LAWS

##### **1 ACT TO PREVENT POLLUTION FROM SHIPS, 33 U.S.C. 1901 et seq.**

Implements for the United States the International Convention on the Prevention of Pollution from Ships (MARPOL). Except as to garbage discharges, requires federal entities to establish regulations to conform agency vessel operations to MARPOL requirements, to the extent reasonable and practicable. Mandates full compliance by U.S. government vessels with MARPOL garbage discharge requirements. With respect to Navy ships, mandates 3/20 day plastic retention rule, plastic processor installation schedule, and public reporting on non-food waste discharges into in-effect special areas. Establishes deadlines for Navy surface ship and submarine plastic discharge termination and special area compliance.

##### **2 ANTIQUITIES ACT OF 1906, 16 U.S.C. 431 et seq.**

Requires the issuance of permits for study, removal, or excavation of any ruins, sites, structures, or objects of historic or scientific interest on Federal and Indian land.

##### **3 ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979 (ARPA), 16 U.S.C. 470aa et seq.**

Requires the issuance of permits for authorized professional excavation or removal of archeological resources on Federal and Indian land.

##### **4 BALD EAGLE PROTECTION ACT, 16 U.S.C 668 et seq.**

Provides for the protection of bald and golden eagles.

##### **5 CLEAN AIR ACT (CAA), 42 U.S.C. 7401 et seq.**

The major federal legislation addressing air pollution control. Establishes national ambient air quality standards (NAAQS) for common air pollutants ("criteria pollutants") and requires States to institute controls with established air quality control regions to achieve the NAAQS. Requires U.S. EPA to establish necessary air quality control where States fail to do so. Severity of controls increases as degree of nonattainment with NAAQS increases. Mandates EPA regulation of 138 identified "hazardous air pollutants." Implements the Montreal Protocol on Ozone Depleting Substances (ODS), mandating phase out of ODS production, prohibiting intentional venting of ODS refrigerants during appliance servicing, and requires technician certification.

##### **6 COASTAL BARRIERS RESOURCES ACT, 16 U.S.C. 3501 et seq.**

Restricts federally subsidized development of undeveloped coastal barriers along the Atlantic and Gulf of Mexico coasts.

##### **7 COASTAL ZONE MANAGEMENT ACT OF 1972 (CZMA), 16 U.S.C. 1451 et seq.**

Provides incentives for coastal States to develop and implement coastal area management programs. Plays a significant role in water pollution abatement, particularly with regard to nonpoint source pollution. State coastal zone management

programs frequently incorporate flood control, sediment control, grading control, and storm water runoff control statutes. Federal actions that impact the coastal zone must be consistent to the maximum extent practicable with the State program.

**8 COMMUNITY ENVIRONMENTAL RESPONSE FACILITATION ACT (CERFA), 42 U.S.C. 9601 note, 9620.**

Amends CERCLA Section 120(h) to allow expedition of reuse and redevelopment of Federal facilities being closed.

**9 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA), 42 U.S.C. 9601 et seq.**

The major federal legislation addressing cleanup of hazardous substance releases. (Other cleanup requirements are imposed under Resource Conservation and Recovery Act (RCRA) corrective action and underground storage tank provisions.) Empowers EPA to identify and prioritize sites for cleanup, and to order or carry out environmental remediation. Subject to limited defenses, imposes strict liability for environmental cleanup on persons whose actions caused release into the environment. Mandates reporting to National Response Center of hazardous substance releases. With Clean Water Act, mandates preparation of the National Contingency Plan for responding to oil or hazardous substance releases. The Superfund Amendments and Reauthorization Act of 1986, *inter alia* established the Defense Environmental Restoration Account, codified at 10 U.S.C. 2701.

**10 CONSERVATION PROGRAMS ON MILITARY INSTALLATIONS (SIKES ACT), 16 U.S.C. 670(a) et seq.**

Requires each military department to manage natural resources and to ensure that services are provided which are necessary for management of fish and wildlife resources on each installation; to

provide their personnel with professional training in fish and wildlife management; and, to give priority to contracting work with Federal and State agencies that have responsibility for conservation or management of fish and wildlife. Authorizes cooperative agreements (with States, local governments, non-governmental organizations, and individuals) which call for each party to provide matching funds or services to carry out natural resources projects/initiatives.

**11 DEFENSE APPROPRIATIONS ACT OF 1991.**

Establishes the Legacy Resource Management Program for the stewardship of biological, geophysical, cultural and historic resources on DoD lands.

**12 EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (EPCRA), 42 U.S.C. 11001 et seq.**

This Act is also known as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA focuses on the hazards associated with toxic chemical releases. Most notably, specific sections of EPCRA require immediate notification of releases of oil and hazardous substances and CERCLA-defined hazardous substances to State and local emergency response planners. Requires State and local coordination in planning response actions to chemical emergencies. Requires certain industries to submit information on chemical inventories and fugitive emissions.

**13 ENDANGERED SPECIES ACT OF 1973 (ESA), 16 U.S.C. 1531 et seq.**

Provides for listing of endangered and threatened species of plants and animals, and designation of critical habitat for animal species. Establishes federal policy that federal agencies, in exercise of their authorities, shall seek to conserve endangered species. Prohibits federal agencies from taking any action that would adversely affect any endangered or threatened species, or critical habitat.



Establishes a consultation process involving federal agencies generally and federal wildlife management agencies, to facilitate avoidance of agency action that would adversely affect species or habitat. Prohibits all persons subject to U.S. jurisdiction including federal agencies, from "taking" endangered species. Taking prohibition includes any harm or harassment, and applies within the U.S. and on the high seas.

**14 FEDERAL ANTI-DEFICIENCY ACT, 31 U.S.C. 1341 et seq.**

Provides that no Federal official or employee may obligate the government for the expenditure of funds before funds have been authorized and appropriated by Congress for that purpose.

**15 FEDERAL FACILITY COMPLIANCE ACT OF 1992 (FFCA), 42 U.S.C. 6901 note, 6908.**

Expands the enforcement authority of Federal and State regulators with respect to solid and hazardous waste management at Federal facilities. FFCA requires Federal facilities to pay any non-discriminatory fees or service charges assessed in connection with a Federal, State, interstate, or local solid or hazardous waste regulatory program. Waives immunity for Federal facilities under solid and hazardous waste laws by allowing States to fine and penalize for violations.

**16 FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA), 7 U.S.C. 136 et seq.**

Provides the principal means for preventing environmental pollution from pesticides through product registration and applicator certification. The registration of all pesticide products by EPA results in label instructions on each container for use, storage, and disposal. Label instructions are legally applicable to all users. Under FIFRA, EPA is required to accept certain pesticides under recall for safe disposal. It is unlawful to purchase, distribute, or use any pesticide that does not have

an EPA registration number or for which registration has been canceled or suspended, or to apply, store, or dispose of any pesticide or container in any manner inconsistent with applicable regulations.

**17 FEDERAL NOXIOUS WEED ACT OF 1974, 7 U.S.C. 2801 et. seq.**

Provides for the control of noxious plants on land under the control or jurisdiction of the Federal government.

**18 FEDERAL WATER POLLUTION CONTROL ACT (CLEAN WATER ACT (CWA)), 33 U.S.C. 1251.**

The major federal legislation addressing water pollution control. Establishes the National Pollution Discharge Elimination System (NPDES) permitting program, to control the discharge of pollutants from point sources into navigable waters. NPDES permits must incorporate industry-specific technology based effluent standards, as well as water quality based effluent standards. Establishes the Dredge and Fill Permit Program, to control the discharge of dredged or fill material in to navigable waters. Requires federal agencies to accommodate concerns of States regarding the consistency of federal projects with State nonpoint source pollution control programs.

**19 FISH AND WILDLIFE CONSERVATION ACT OF 1980, 16 U.S.C 2901 et seq.**

Provides for conservation, protection, restoration, and propagation of certain species; including migratory birds threatened with extinction.

**20 FISH AND WILDLIFE COORDINATION ACT, 16 U.S.C. 661 et seq.**

Provides for effective integration of fish and wildlife conservation programs with Federal water resources development and conservation projects having an impact on water resources.

**21 FOREST RESOURCES  
CONSERVATION AND SHORTAGE RELIEF  
ACT OF 1990, 16 U.S.C. 620 et. seq.**

Regulates the export of unprocessed timber originating from Federal lands in the western States, and prohibits sale of such timber from Federal lands west of the 100th meridian in the contiguous 48 States to persons for the purpose of exportation, or to substitute for timber exported from private lands. Provides for exceptions and development of a program defining species and grades of timber excepted.

**22 HISTORIC SITES, BUILDINGS, AND  
ANTIQUITIES ACT, 16 U.S.C. 461 et. seq.**

Requires Federal agencies to consider the existence and location of landmarks on the National Registry of Natural Landmarks to avoid undesirable impacts on such landmarks.

**23 MARINE MAMMAL PROTECTION  
ACT OF 1972 (MMPA), 16 U.S.C. 1431 et seq.**

Subject to limited exceptions, prohibits the "taking" of marine mammals in the United States or on the high seas. "Taking" includes any harm or harassment.

**24 MARINE PROTECTION, RESEARCH,  
AND SANCTUARIES ACT, 33 U.S.C. 1401.**

Implements for the United States the London Dumping Convention. Requires EPA permit for transportation from the U.S., or from elsewhere in the world, of any "material" for the purpose of disposing of it in the ocean. Establishes the National Marine Sanctuary program, under which the National Oceanic and Atmospheric Administration (NOAA) designates and establishes regula-

tions pertaining to national marine sanctuaries. NOAA regulations in some cases restrict discharges from vessels and aircraft overflight.

**25 MIGRATORY BIRD TREATY ACT, 16  
U.S.C. 703.**

Prohibits taking or harming of migratory and certain other birds, their eggs, nests, or young without the appropriate permit.

**26 MILITARY CONSTRUCTION  
AUTHORIZATION ACT OF 1975, 10 U.S.C.  
2665.**

Allows the proceeds from the sale of recyclable material to be credited to the installation to cover specified costs.

**27 MILITARY CONSTRUCTION CODIFI-  
CATION ACT, 10 U.S.C. 2577 et seq.**

An Act to provide guidance for the sale of certain recyclable material.

**28 NATIONAL ENVIRONMENTAL  
POLICY ACT OF 1969 (NEPA), 42 U.S.C. 4321  
et seq.**

Mandates federal agency consideration and documentation of environmental impacts of proposed actions and legislation. Mandates preparation of comprehensive environmental impact statement where proposed action is "major" and significantly affects the quality of the human environment.

**29 NATIONAL HISTORIC  
PRESERVATION ACT, 16 U.S.C. 470 et seq.**

Requires Federal agencies to take account of the effect of any federally-assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.

Specific procedures are established for compliance, including initial review authority by the cognizant State Historical Protection Officer.

**30 NOISE CONTROL ACT OF 1972, 42 U.S.C. 4901 et seq (as amended by the Quiet Communities Act).**

Authorizes establishment of Federal noise emission standards for products distributed in commerce, and coordinates Federal research efforts in noise control.

**31 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA), 29 U.S.C. 651 et seq.**

Assures safe and healthful working conditions for men and women by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful conditions; by providing for research, information, education, and training in the field of occupational safety and health.

**32 OIL POLLUTION ACT OF 1990 (OPA 90), 33 U.S.C. 2701 et seq.**

Mandates extensive planning for oil spills from tank vessels and onshore and offshore facilities. Establishes comprehensive elements of damage for oil spills, and imposes strict liability on those responsible for oil spills. Inapplicable to public vessels.

**33 OUTDOOR RECREATION PROGRAMS ORGANIC ACT, 16 U.S.C. 460l et seq.**

Defines a program for managing of lands for outdoor recreation. Requires Federal departments to consult with the Secretary of Interior on plans and activities relating to outdoor recreation, and to manage outdoor recreation programs in general conformity to the nationwide plan.

**34 POLLUTION PREVENTION ACT OF 1990 (PPA), 42 U.S.C. 13101, et seq.**

Establishes the national policy that "pollution should be prevented or reduced at the source whenever feasible. Pollution that cannot be prevented should be recycled in an environmentally safe manner. Disposal or other release of pollutants into the environment should be employed only as a last resort and should be conducted in an environmentally sound manner."

**35 RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976 (RCRA), 42 U.S.C. 6901 et seq.**

The major federal legislation addressing hazardous waste management. RCRA amends the Solid Waste Disposal Act (SWDA). Establishes duties and responsibilities of hazardous waste generators, transporters, storers, treaters and disposers. Authorizes U.S. EPA to mandate cleanup of hazardous waste releases through "corrective action" orders. Regulates underground storage tanks, imposing structural integrity and management practice requirements.

**36 SAFE DRINKING WATER ACT (SDWA), 42 U.S.C. 300f et seq.**

Creates a system for the protection of drinking water supplies through establishment of contaminant limitations and enforcement procedures. The SDWA requires EPA to issue primary drinking water standards to protect public health. Allows EPA to designate Sole Source Aquifers as the principal source of drinking water for communities. Requires each State to adopt a Wellhead Protection program to prevent contamination of surface and subsurface areas that surround wells within their jurisdiction from contamination. States have primary responsibility to enforce compliance with national primary drinking water standards and sampling, monitoring, and notice requirements.

**37 SOIL CONSERVATION AND DOMESTIC ALLOTMENT ACT, 16 U.S.C.**

**590a et seq.**

Provides for the application of soil conservation practices on Federal lands.

**38 TOXIC SUBSTANCES CONTROL ACT (TSCA), 15 U.S.C. 2601 et seq.**

Provides for the Federal regulation of the manufacture, use, distribution in commerce, and disposal of chemical substances that present a hazard to health or the environment. The major objective of TSCA is to characterize and understand the risks that a chemical poses to humans and the environment before it is introduced into commerce. The Act also contains specific requirements relative to Polychlorinated Biphenyls (PCBs), asbestos, and radon.

**PART 2**

**FEDERAL REGULATIONS**

**1 CODE OF FEDERAL REGULATIONS**

The Code of Federal Regulations (CFR) consists of 50 titles representing broad areas subject to Federal regulation. All general and permanent regulations published in the daily Federal Register by executive agencies and departments of the Federal government appear in the CFR, which is updated annually. For example, all regulations issued by the EPA under the subject heading "Protection of the Environment" are codified in Title 40 of the CFR.

Relevant CFRs are:

1. 15 CFR 923, National Oceanic and Atmospheric Administration Coastal Zone Management Program Development and Approval Regulation;
2. 15 CFR 930, Federal Consistency with Approved Coastal Management Programs;
3. 18 CFR 1312, Archeological Resource Protection Act Regulations;

4. 29 CFR 1910, Occupational Safety and Health Standards;

5. 29 CFR 1910.120, Occupational Safety and Health Administration (OSHA) Regulations on Hazardous Waste and Emergency Response;

6. 29 CFR 1910.1200, OSHA Hazard Communication Standard;

7. 32 CFR 172 (DoD Instruction 7310.1), DoD Regulations for the Disposition of Proceeds from Sales of Surplus Property;

8. 32 CFR 190, Natural Resources Management Program;

9. 32 CFR 775, DON Procedures for Implementing the National Environmental Policy Act (NEPA);

10. 33 CFR 154, Oil Pollution Prevention Regulations for Marine Oil Transfer Facilities;

11. 33 CFR 330, Dredge & Fill Nationwide Permit Program;

12. 36 CFR 800, National Historic Preservation Act (NHPA) Regulations for the Protection of Historic Properties;

13. 40 CFR 6, EPA Regulations on Implementation of National Environmental Policy Act Procedures;

14. 40 CFR 50, Environmental Protection Agency Regulations on National Primary and Secondary Ambient Air Quality Standards;

15. 40 CFR 51-52, EPA Requirements for Preparation, Adoption, Submittal, Approval and Promulgation of Implementation Plans;

16. 40 CFR 53, EPA Regulations for Ambient Air Monitoring Reference and Equivalent Methods;

17. 40 CFR 55, Outer Continental Shelf Air Regulations;
18. 40 CFR 56, EPA Regulations on Regional Consistency Under the Clean Air Act;
19. 40 CFR 58, EPA Ambient Air Quality Surveillance Regulations;
20. 40 CFR 60, EPA Regulations on New Source Performance Standards;
21. 40 CFR 61, National Emissions Standards for Hazardous Air Pollutants;
22. 40 CFR 62, EPA Regulations on State Plans for Designated Facilities and Pollutants;
23. 40 CFR 65, EPA Regulations on Delayed Compliance Orders Under the Clean Air Act;
24. 40 CFR 66, EPA Regulations for Assessment and Collection of Noncompliance Penalties;
25. 40 CFR 68, Chemical Accident Prevention Provisions;
26. 40 CFR 69, EPA Special Exemptions from Requirements of the Clean Air Act;
27. 40 CFR 70, State Operating Permit Programs;
28. 40 CFR 80, Regulation of Fuels and Fuel Additives;
29. 40 CFR 81, EPA Regulations Designating Areas for Air Quality Planning;
30. 40 CFR 82, EPA Stratospheric Ozone Protection Regulations;
31. 40 CFR 86, Control of Air Pollution from New and In-Use Motor Vehicle Engines: Certification and Test Procedures;
32. 40 CFR 87, EPA Regulations on Control of Air Pollution and Aircraft and Aircraft Engines;
33. 40 CFR 104, EPA Regulations on Public Hearings on Effluent Standards for Toxic Pollutants;
34. 40 CFR 109, EPA Regulations on Criteria for State, Local, and Regional Oil Removal Contingency Plans;
35. 40 CFR 110, EPA Regulations on Discharge of Oil;
36. 40 CFR 112, EPA Regulations on Oil Pollution Prevention;
37. 40 CFR 113, EPA Regulations on Liability for Small Onshore Oil Storage Facilities;
38. 40 CFR 116-117, EPA Regulations on Hazardous Substances;
39. 40 CFR 122, EPA National Pollutant Discharge Elimination System Permit Regulations;
40. 40 CFR 125, EPA Regulations on Criteria and Standards for the National Pollutant Discharge Elimination System;
41. 40 CFR 129, EPA Toxic Pollutant Effluent Standards;
42. 40 CFR 130, EPA Requirements for Water Quality Planning and Management;
43. 40 CFR 141-143, EPA National Drinking Water Regulations;
44. 40 CFR 148, EPA Regulations on Hazardous Waste Disposal Restrictions for Class I Wells;
45. 40 CFR 150-186, EPA Regulations for Pesticide Programs;
46. 40 CFR 162, EPA Regulations on Insecticide,

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Fungicide, and Rodenticide Use;

47. 40 CFR 220-225, 227-229, Ocean Dumping Regulations and Criteria;

48. 40 CFR 230, EPA Interim Regulations on Discharge of Dredged or Fill Material into Navigable Waters;

49. 40 CFR 231, EPA Regulations on Disposal Site Determination Under the Clean Water Act;

50. 40 CFR 240-241, EPA Guidelines for the Thermal Processing of Solid Wastes and for the Land Disposal of Solid Wastes;

51. 40 CFR 243, EPA Guidelines for Solid Waste Storage and Collection;

52. 40 CFR 244, EPA Guidelines for Solid Waste Management of Beverage Containers;

53. 40 CFR 245, EPA Guidelines for Resource Recovery Facilities;

54. 40 CFR 246, EPA Guidelines for Source Separation for Materials Recovery;

55. 40 CFR 247, EPA Guidelines for Procurement of Products that Contain Recycled Material;

56. 40 CFR 248, EPA Guidelines for Federal Procurement of Building Insulation Products Containing Recovered Materials;

57. 40 CFR 249, EPA Guidelines for Federal Procurement of Cement and Concrete Containing Fly Ash;

58. 40 CFR 250, EPA Guidelines for Federal Procurement of Paper and Paper Products Containing Recovered Materials;

59. 40 CFR 252, EPA Guidelines for Federal Procurement of Lubricating Oils Containing Refined Oil;

60. 40 CFR 253, EPA Guidelines for Federal Procurement of Retread Tires;

61. 40 CFR 255, EPA Guidelines for Identification of Regions and Agencies for Solid Waste Management;

62. 40 CFR 257, EPA Regulations on Criteria for Classification of Solid Waste Disposal Facilities and Practices;

63. 40 CFR 259, EPA Medical Waste Regulations;

64. 40 CFR 260-270, EPA Regulations Implementing RCRA;

65. 40 CFR 262, EPA Regulations for Hazardous Waste Generators;

66. 40 CFR 264, EPA Regulations for Owners and Operators of Permitted Hazardous Waste Facilities;

67. 40 CFR 268, EPA Regulations on Land Disposal Restrictions;

68. 40 CFR 280, Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks;

69. 40 CFR 300, National Oil and Hazardous Substances Pollution Contingency Plan under CERCLA and CWA;

70. 40 CFR 300.600, National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Designation of Federal Trustees;

71. 40 CFR 300.615, Responsibilities of Trustees;

72. 40 CFR 302, EPA Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under CERCLA;

73. 40 CFR 355, EPA Regulations for Emergency

Planning and Notification Under CERCLA;

74. 40 CFR 370, EPA Hazardous Chemical Reporting and Community Right-To-Know Requirements;

75. 40 CFR 372, EPA Toxic Chemical Release Reporting Regulations;

76. 40 CFR 373, EPA Regulations for Real Property Transactions under CERCLA;

77. 40 CFR 403, General Pretreatment Regulations for Existing and New Sources of Pollution;

78. 40 CFR 413, EPA Effluent Guidelines and Standards for Electroplating;

79. 40 CFR 414, EPA Effluent Guidelines and Standards for Organic Chemicals;

80. 40 CFR 415, EPA Guidelines and Standards for Inorganic Chemicals;

81. 40 CFR 417, EPA Effluent Guidelines and Standards for Soaps and Detergents;

82. 40 CFR 433, EPA Effluent Guidelines and Standards for Metal Finishing;

83. 40 CFR 504, State Sludge Management Program Regulations;

84. 40 CFR 760-761, EPA Regulations for Controlling PCBs;

85. 40 CFR 1500-1508, Council on Environmental Quality Regulations on Implementing National Environmental Policy Act Procedures;

86. 41 CFR Subchapter H Parts 41-47, GSA Disposal Regulations;

87. 49 CFR 100-199, Department of Transportation Hazardous Materials Regulations;

88. 49 CFR 126, Requires training and written examination of personnel that transport pesticide on public highways;

89. 49 CFR 194, DOT Research and Special Programs Administration (RSPA) Oil Pollution Prevention Regulations for Onshore Pipelines;

90. 50 CFR 10, Regulations Concerning Marine Mammals;

91. 50 CFR 10.13, List of Migratory Birds;

92. 50 CFR 17.11 and 17.12, Fish and Wildlife Service List of Endangered and Threatened Wildlife;

93. 50 CFR 18, 216, 228, Regulations Concerning Marine Mammals;

94. 50 CFR 402, Interagency Cooperation - Endangered Species Act of 1973.

**PART 3**

**EXECUTIVE ORDERS (EOs) AND  
REORGANIZATION PLANS**

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**1 EXECUTIVE ORDER 11644, 8 February 1972, Use of Off-Road Vehicles on the Public Lands. Amended by EO 11989 and EO 12608.**

Requires federal land managing agencies, including the Department of Defense, to issue regulations governing use of off-road vehicles on the public lands. Regulations shall be designed to protect natural resources and protect safety of individuals involved. Clarifies agency authority to define zones of use by off-road vehicles on public lands and amends EO 11644 of 8 February 1972, by exempting fire, military, emergency, law enforcement, or combat/combat support vehicles.

**2 EXECUTIVE ORDER 11990, 24 May 1977, Protection of Wetlands.**

Requires federal agencies to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands have been implemented.

**3 EXECUTIVE ORDER 12088, of 13 October 1978, Federal Compliance with Pollution Control Standards.**

Provides that the head of each federal agency is responsible for compliance with "applicable pollution control standards," defined as "the same substantive, procedural and other requirements that would apply to a private person." Requires federal agencies to cooperate with the U.S. EPA, States, and local agencies in the prevention, control and abatement of environmental pollution. Requires the EPA Administrator to provide technical advice and assistance to Executive agencies in order to ensure their cost effective and timely compliance with applicable pollution control standards. Provides that disputes between the U.S. EPA and another federal agency regarding environmental violations shall be elevated to the Office of Management and Budget for resolution.

**4 EXECUTIVE ORDER 12114, 4 January 1979, Environmental Effects Abroad of Major**

**Federal Actions.**

Requires environmental study, under delineated circumstances, of actions proposed to be undertaken outside the geographical borders of the United States.

**5 EXECUTIVE ORDER 12146, Management of Federal Legal Resources.**

Provides that federal agencies whose heads serve at the pleasure of the President shall submit interagency legal disputes to the Attorney General.

**6 EXECUTIVE ORDER 12344, 1 February 1982, Naval Nuclear Propulsion Program.**

Provides that the Director of the Naval Nuclear Propulsion Program shall prescribe and enforce standards and regulations for the safety of reactors and associated naval nuclear propulsion plants, and for control of radiation and radioactivity associated with naval nuclear propulsion activities, as such activities affect the environment and the safety and health of workers, operators and the general public.

**7 EXECUTIVE ORDER 12580, 23 January 1987, Superfund Implementation.**

Delegates to various federal agencies, including the Department of Defense, various responsibilities assigned to the President under the Comprehensive Environmental Response, Compensation and Liabilities Act.

**8 EXECUTIVE ORDER 12777, 18 October 1991, Implementation of Section 311 of the Federal Water Pollution Control Act of October 18, 1972, and the Oil Pollution Act of 1990.**

Delegates to the U.S. EPA and the Coast Guard



various responsibilities assigned to the President under Clean Water Act section 311 and the Oil Pollution Act of 1990.

**9 EXECUTIVE ORDER 12780, 31 October 1991, Federal Agency Recycling and the Council on Federal Agency Recycling and Procurement Policy.**

Requires federal agencies to promote cost-effective waste reduction and recycling of reusable materials, and to establish federal preferences for procurement of items made from recycled materials.

**10 EXECUTIVE ORDER 12843, 23 April 1993, Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances.**

Mandates federal agency use of non-ozone-depleting substances where economically practicable, and demonstration of leadership to phase out ozone depleting substances.

**11 EXECUTIVE ORDER 12856, 3 August 1993, Federal Compliance With Right-to-Know Laws and Pollution Prevention Requirements.**

Requires Federal agency compliance with various sections of EPCRA.

**12 EXECUTIVE ORDER 12873, 20 October 1993, Federal Acquisition, Recycling and Waste Prevention.**

Requires federal agencies to promote waste prevention, to recycle, and to expand markets for recovered materials.

**13 EXECUTIVE ORDER 12898, 11 February 1994, Environmental Justice.**

Deals with Federal actions to address environmental justice in minority populations and low-income populations.

**14 EXECUTIVE ORDER 12902, 8 March 1994, Energy Efficiencies and Water Conservation at Federal Facilities.**

Federal agency use of energy and water resources is directed towards the goals of increased conservation and efficiency.

**PART 4**

**OMB CIRCULARS**

**1 OFFICE OF MANAGEMENT AND BUDGET (OMB) CIRCULAR NO. A-106, 31 December 1974.**

This circular provides procedures to be followed by Federal agencies in carrying out the provisions of EO 12088 pertaining to the control of environmental pollution from existing Federal facilities. All Federal agencies must report specific environmental requirements semiannually, in a standard format, to EPA.

**PART 5**

**DEPARTMENT OF DEFENSE DIRECTIVES**

1. DoD Directive 4001.1 of 4 September 1986, Installation Management; (NOTAL)
2. DoD Directive 4140.1 of 4 January 1993, Material Management Policy; (NOTAL)
3. DoD Directive 4150.7 of 24 October 1983, DoD Pest Management Program; (NOTAL)
4. DoD Directive 4165.57 of 8 November 1977, Air Installations Compatible Use Zones; (NOTAL)
5. DoD Directive 4165.60 of 4 October 1976, Solid Waste Management - Collection, Disposal, Resource Recovery, and Recycling Program; (NOTAL)
6. DoD Directive 4700.2 of 15 July 1988,

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Secretary of Defense Award for Natural Resources and Environmental Management; (NOTAL)

7. DoD Directive 4710.1 of 21 June 1984, Archeological and Historical Resources Management; (NOTAL)

8. DoD Directive 6050.1 of 30 July 1979, Environmental Effects in the United States of DoD Actions; (NOTAL)

9. DoD Directive 6050.4 of 16 March 1982, Marine Sanitation Devices for Vessels Owned or Operated by the Department of Defense; (NOTAL)

10. DoD Directive 6050.7 of 31 March 1979, Environmental Effects Abroad of Major Department of Defense Actions; (NOTAL)

11. DoD Directive 6050.8 of 27 February 1986, Storage and Disposal of non-DoD Owned Hazardous or Toxic Materials on DoD Installations; (NOTAL)

12. DoD Directive 6050.15 of 14 June 1985, Prevention of Oil Pollution from Ships Owned or Operated by the DoD. (NOTAL)

## APPENDIX D

### ENVIRONMENTAL AND NATURAL RESOURCES AWARDS PROGRAM

#### 1 Chief of Naval Operations and Secretary of the Navy Environmental Awards Program

- R) **1.1 Awards Program.** CNO and SECNAV each separately grant annual Environmental Quality awards to ships, shore activities, and personnel of the Navy Department. They present 19 categories of awards in six major areas:
- R) (1) Natural Resources Conservation  
Large Installation (> 10,000 acres)  
Small Installation (# 10,000 acres)  
Individual/Team
- A) (2) Cultural Resources Management  
Installation  
Individual/Team
- R) (3) Environmental Quality  
Industrial Installation  
Non-Industrial Installation  
Individual/Team  
Large Ship (Crew size > 400)  
Small Ship (Crew size # 400)
- A) (4) Pollution Prevention  
Industrial Installation  
Non-Industrial Installation  
Individual/Team  
Weapon System Acquisition Team
- D) (5) Recycling  
Industrial Installation  
Non-Industrial Installation  
Individual/Team
- (6) Environmental Cleanup  
Installation  
Individual/Team

CNO and SECNAV present environmental awards to stimulate outstanding performance in promoting natural resources conservation and the protection and enhancement of human health and the environment.

Besides determining the winners of the CNO awards, CNO will nominate a total of three entries in each category to SECNAV. SECNAV then independently selects winners from these nominees for the SECNAV awards in the same categories. SECNAV submits the winners for competition in the Secretary of Defense Environmental Security Awards Program.

#### 1.2 Guidelines and Standards

**1.2.1 Applicability.** The Ship Award Categories apply to all Navy ships. The Installation Award Categories apply to all Navy Department installations world-wide. The Individual Award Categories apply to all Navy personnel, both military and civilian, world-wide. If nominated for a team award, one or more, but not all, of the members of the team may be contractor employees; the other team members must be DOD civilian employees or members of the U.S. Armed Forces. Activities should compete on an installation-by-installation basis, even for areas where a regional staff supports the environmental department. (R)

**1.2.2 Nomination Schedule for CNO Awards.** The nomination schedule for the CNO Environmental Awards is as follows:

a. Nominating commands will forward nomination packages to CNO for the appropriate award category by 1 December. Competing activities will prepare a nomination package conforming to SECNAV nomination criteria. (See 1.3.1, SECNAV Nominations, page D-2.) A

forwarding letter will accompany the nomination package through the chain of command. The letter must furnish activity and major claimant points of contact, telephone numbers (voice and facsimile, DSN and commercial) and e-mail addresses.

- R) b. CNO (N45) staff (assisted by non-staff advisors as necessary) shall evaluate nominations and select finalists by 17 January.

R) **1.2.3 CNO Award Package Nomination Submission.** Each Echelon 2 Commander may submit up to five nominations for each award category to CNO (N45), for the period ending the preceding September 30. Major Claimants, at their discretion, may nominate three **ships** per applicable category. Nominations shall be in a narrative style, and include responses to the applicable items listed in tabs A-F. Each package shall consist of single-spaced, double-sided text; and typewritten or printed on 8½ x 11- inch sheets of recycled paper. The nominations shall be concise and describe the program and accomplishments accurately

**1.2.4 Judging Criteria.** CNO will use the following criteria in judging nomination packages:

- a. Program Management
- b. Technical Merit
- R) c. Orientation to Mission
- d. Transferability
- e. Community Interaction
- f. Program Breadth

Tab G describes this judging criteria in greater detail.

**1.3 SECNAV Awards Nomination Schedule.** Nomination packages for SECNAV Environ-

mental Awards must arrive at SECNAV (ASN(I&E)) not later than 1 February. SECNAV will convene a panel of experts from government, industry and academia to evaluate the nomination package and select a winner and runner-up in each award category. The winners will compete in comparable categories for the DOD Environmental Security Awards.

**1.3.1 SECNAV Nominations.** CNO will (R) submit the top three nomination packages in each award category to SECNAV, in a narrative style, including responses to applicable items listed in tabs A-F. Each nomination shall consist of single-spaced text and may use graphics, e.g., tables, charts, diagrams, photographs, maps, to clarify accomplishments, but not videos or music. The text of installation nominations shall consist of 7,000 words or less. The text of individual and team nominations shall consist of 3,000 words or less. The text of ship nominations shall consist of 3,000 words or less.

Each nomination shall also include: (1) the name, mailing address, e-mail address, and telephone number (commercial and DSN) of the nominee, i.e., installation point of contact (POC) , individual or team point of contact (POC), ship point of contact (POC); (2) name, mailing address, e-mail address and telephone and fax numbers (commercial and DSN) of the financial POC for the nominee's installation (for use in the event the nominee wins a cash award); and (3) a paragraph of up to six sentences summarizing the achievements of the nominee, using quantitative examples, suitable to print in the awards ceremony handout, and be read during the awards ceremony (the latter should the nominee win).

A panel of judges will evaluate nominations using key points (tab G) covered in the information provided in the nominations.

**1.3.2 Award Announcement and Presentation.** CNO and SECNAV will announce the winners of their awards by message, e-mail and

facsimile. (The immediate superior in command of each winner will schedule an awards ceremony to present appropriate items of award recognition.)

## 1.4 Responsibilities

**1.4.1 DCNO (Logistics) (CNO (N45)) or designee** shall coordinate and administer the CNO contribution to the SECNAV awards program, including amplification of the guidelines provided in section 1.2. CNO (N45) shall establish an awards committee to assist in the selection process.

### 1.4.2 Echelon 2 commanders shall:

- R) a. Conduct initial evaluations and submit up to five nominations per category to CNO(N4), DCNO (Logistics). At their discretion, major claimants may nominate three ships per category.
- b. Enter nominations only when the activities are truly outstanding.
- c. Assist the program by giving appropriate command recognition to subordinate commands excelling in pollution avoidance, abatement and control, and to individuals engaged therein.

- R) **2 Awards** Tabs A-F include Categories and Judging Criteria, adapted from Deputy Under Secretary for Environmental Security (DUSD (ES)) guidance.

a. Tab A Criteria for Nomination of Large Installation, Small Installation and Individual/Team for the CNO and Secretary of the Navy Natural Resources Conservation Award

b. Tab B Criteria for Nomination of Installation and Individual/Team for the CNO and Secretary of the Navy Cultural Resources Management Award

c. Tab C Criteria for Nomination of Industrial Installation, Non-Industrial Installation, Individual/Team, Large Ship and Small Ship for the CNO and Secretary of the Navy Environmental Quality Award

d. Tab D Criteria for Nomination of Industrial Installation, Non-Industrial Installation, Individual/Team, and Weapon System Acquisition Team for the CNO and Secretary of the Navy Pollution Prevention Award

e. Tab E Criteria for Nomination of Industrial Installation, Non-Industrial Installation and Individual/Team for the CNO and Secretary of the Navy Recycling Award

f. Tab F Criteria for Nomination of Installation and Individual/Team for the CNO and Secretary of the Navy Environmental Cleanup Award

g. Tab G Guidance for Judging the CNO and Secretary of the Navy Environmental Awards

**2.1 Supplemental Guidance.** SECNAV may modify these formats based upon changes in the DUSD (ES) award categories and criteria.

(R)

(R)

(R)

(R)

(R)

(D)

(R)

A)

**TAB C**

**CRITERIA FOR NOMINATION FOR THE CNO AND  
SECRETARY OF THE NAVY ENVIRONMENTAL QUALITY AWARD**

**PART ONE, AWARD CATEGORIES:  
ENVIRONMENTAL QUALITY—INDUSTRIAL INSTALLATION  
ENVIRONMENTAL QUALITY—NON-INDUSTRIAL INSTALLATION**

**1 Introduction**

**1.1** Describe the mission, approximate civilian and military population (unless classified), and total acreage of the nominee. Describe the environmental, geographical, political, economic, and community setting of the nominee.

**2 Background**

**2.1** Summarize the environmental challenges affecting the nominee.

**2.2** Describe the organization and staffing of the nominee's environmental management program and the management approach employed.

**2.3** Describe any nominee and community committees, boards, and partnerships that influence the nominee's environmental management program.

**2.4** Describe significant environmental plans and agreements, including the dates of preparation or latest revision.

**3 Program Summary**

**3.1** Describe the objectives of the environmental management program and the degree to which the nominee attained each objective during the preceding 2 fiscal years (inclusive of the award fiscal year).

**3.2** Describe the most outstanding features of the program during that period.

**3.3** Describe what is unique about the program, its cost effectiveness, and whether it goes beyond meeting statutory and regulatory requirements.

**4 Accomplishments.** Describe the most outstanding accomplishments during the preceding 2 fiscal years (inclusive of the award fiscal year) in the following areas, if applicable:

**4.1 National Environmental Policy Act (NEPA) Implementation**

**a. National Environmental Policy Act Planning**

(1) NEPA reinvention, application of innovative environmental analysis, partnering, flexibility in analysis, and cost reduction

(2) Scoping and/or focusing analysis in order to streamline the process of identifying the proposed action, appropriate alternatives, and mitigation measures

(3) Setting objectives and goals

(4) Developing a plan of action.

**b. NEPA Analysis**

(1) Proposals analyzed, decisions made, and the NEPA process executed for each proposal

(2) Coordination and public involvement techniques employed, and their effectiveness

(3) Methodology for integrating environmental analysis into planning and decision making

(4) Results of impact mitigation measures.

**c. NEPA Implementation**

(1) Actions to engage in cooperative consultation with other Federal, State, and local agencies and Indian tribes

(2) Management of public participation

(3) Examples of ensuring editorial excellence, including readability and brevity

(4) Use of time management techniques and the results, including the amount of time that elapsed between scoping and issuance of the final product

(5) Innovative approaches used in environmental analysis and whether the innovations were institutionalized

(6) Controls incorporated to monitor the environmental effects of the proposed action and the mitigation measures adopted.

**d. Compliance with Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population," February 11, 1994**

(1) How the nominee incorporated the analysis required by EO 12898 into the NEPA process

(2) How the nominee identified, and the methods used to analyze, any disproportionate impacts on minority or low-income communities, as appropriate.

**4.1.1 Air Pollution Control**

a. Permits, compliance records, and operating plant/facility improvements

b. Emission sampling and ambient air monitoring

c. Control of activities in consideration of meteorological conditions

d. Participation in regional air quality planning and protection.

**4.1.2 Water Pollution Control**

a. Permits, compliance records, and operating plant/facility improvements

b. Management of point and non-point sources

c. Spill prevention and response

d. Water conservation

e. Drinking water protection

f. Ground water protection.

**4.1.3 Noise Pollution Control**

a. Noise sources and management methods

b. Planning and zoning activities.

**4.1.4 Radiation Pollution Control**

a. Radiation sources (unclassified only)

b. Control and management methods.

**4.1.5 Waste Management and Resource Recovery**

a. Solid (municipal) waste management

b. Toxic and hazardous waste management.

#### **4.1.6 Pest Management**

a. Integrated pest management program elements and management methods

b. Reductions in pesticide use (e.g., pounds of active ingredients and use of safer pesticides).

#### **4.1.7 Environmental Research and Education (on and off nominee's property)**

a. Programs to enhance environmental ethics and awareness

b. Environmental research, development, and technology demonstration/validation projects

c. Community involvement and activities, and affiliation of the nominee's personnel with civic and local environmental organizations

d. Cooperation with Federal, State, and local agencies, organizations, and academic institutions.

#### **4.1.8 Environmental Compliance Assessment and Management Program**

a. Self assessments and follow-up

b. Interaction with regulators regarding inspections, notices of violation (NOVs), agreements, fines and penalties, and other regulatory actions

c. Budget data to illustrate adequate funding is budgeted and received

d. Long-term planning for full and sustained compliance

e. Training programs.



## **TAB C**

### **CRITERIA FOR NOMINATION FOR THE CNO AND SECRETARY OF THE NAVY ENVIRONMENTAL QUALITY AWARD**

#### **PART TWO, AWARD CATEGORY: ENVIRONMENTAL QUALITY—INDIVIDUAL/TEAM**

##### **1 Background**

**1.1** List the individual's, or each team member's, name, title or position, and employing organization.

##### **2 Position Description**

**2.1** Provide a summary of the nominee's major routine duties and responsibilities during the preceding 2 fiscal years, inclusive of the award fiscal year.

##### **3 Accomplishments**

**3.1** Describe the most outstanding accomplishments of the nominee during the preceding 2 fiscal years, inclusive of the award fiscal year. (See tab C, part 1, section 4.)

**3.2** Describe:

a. How well the nominee managed the program

b. The program's technical merits

c. How well the program supported the military readiness mission

d. How effectively the program's lessons learned may be transferred from the nominee to others

e. The nominee's success in involving the local community in the program

f. The breadth of the program (tab G).

##### **4 Awards and Services**

**4.1** List and describe awards and other special environmental management recognition given to the nominee during the preceding 5 fiscal years, inclusive of the award fiscal year.

**4.2** Describe related professional achievements, including community service work and participation in professional organizations.

**TAB C**

**CRITERIA FOR NOMINATION FOR THE CNO AND  
SECRETARY OF THE NAVY ENVIRONMENTAL QUALITY AWARD**

**PART THREE, AWARD CATEGORIES:  
ENVIRONMENTAL QUALITY—LARGE SHIP  
ENVIRONMENTAL QUALITY—SMALL SHIP**

- 1 Introduction.** List the ship's mission (unless classified), approximate crew size, and homeport.
- 2 Background**
  - 2.1** Summarize the ship's environmental challenges in the past 2 fiscal years, inclusive of the award fiscal year.
  - 2.2** Describe the ship's environmental management organization and staffing.
  - 2.3** List all the ship's environmental guidance, directives, and plans (i.e., spill contingency plans) and dates of preparation or last review.
- 3 Program Summary**
  - 3.1** Describe the ship's environmental program and degree of compliance with Chapter 19 and Appendix K during the past 2 fiscal years.
  - 3.2** Describe the most outstanding program features and accomplishments (3 or less) of the past 2 fiscal years.
- 4 Accomplishments.** Describe activities and achievements during the past 2 fiscal years in the following areas, if applicable:
  - 4.1 Air Pollution Control.** Describe air pollution control practices and improvements. Include management efforts to control engine emissions, to reduce refrigerant use, and to minimize volatile organic compound releases.
  - 4.2 Water Pollution Control**
    - 4.2.1** Delineate collection, holding, and transfer (CHT) system management practices.
    - 4.2.2** Describe oil and hazardous substance spill prevention/response efforts.
    - 4.2.3** Describe shipboard practices for waste oil/oily waste management. Include identification of bilgewater management practices. Identify the operating capabilities of the oil/water separator and oil content monitor during the past 2 fiscal years and efforts, if any, to improve these capabilities.
  - 4.3 Solid Waste Management and Resource Recovery**
    - 4.3.1** Summarize solid waste management practices.
    - 4.3.2** List source reduction techniques used by the command.
    - 4.3.3** Enumerate resource recovery recycling techniques used by the command.
  - 4.4 Hazardous Material (HM)/Hazardous Waste (HW) Management.** Describe hazardous material control and management efforts. Describe the ship's efforts for reutilization and inventory management. Describe the ship's efforts to reduce the amount of used HM transferred ashore. Describe the ship's efforts to use material from shoreside Hazardous Waste Minimization Centers (HAZMINCEN).
  - 4.5 Environmental Awareness.** List command-initiated programs to enhance environmental protection and awareness.

A)

## TAB G

### GUIDANCE FOR JUDGING THE CNO AND SECRETARY OF THE NAVY ENVIRONMENTAL AWARDS

#### 1 General

a. It is not desirable to compare installations, teams or individuals *quantitatively* for the environmental awards. Rather, judges should compare them *qualitatively*.

b. Using the six categories below, judges will base selection on:

(1) How well the nominee managed the program

(2) The program's technical merits

(3) How well the program supported the military readiness mission

(4) How effectively the program's lessons learned may be transferred from the nominee to others

(5) The nominee's success in involving the local community in the program and

(6) The breadth of the program.

#### 2 Program Management

a. How much improvement did the nominee demonstrate during the period under consideration?

b. Was there an appropriate management structure (including sufficient personnel) to effectively manage the program?

c. Did the program demonstrate coordination with other internal offices (e.g., funds manager, master planner, real property manager, utilities engineer, etc.)?

d. Were all required plans prepared and were they up-to-date?

e. Did the program comply with all applicable statutes and regulations?

f. Were all sources of funding explored? Successfully?

g. Did the nominee clearly identify program milestones?

h. What cost savings and benefits were derived?

#### 3 Technical Merit

a. Did the nominee use sound environmental management techniques?

b. Did the nominee use innovative, new techniques and good judgment? Of the techniques used, were any successful? In what way?

c. Was the program effective in protecting, enhancing, and/or restoring the environment?

d. Did the program target source reduction of waste and harmful discharges and emissions?

e. While enhancing one sector of the environment, did the program subject other parts of the environment to real or potential hazards?

f. Did the program promote more efficient use of resources?

#### **4 Orientation To Military Readiness**

a. Did the program demonstrate coordination with individuals responsible for the military readiness mission at the installation (e.g., trainers and operators)?

b. Did the program contribute to the successful execution of the nominee's military readiness mission?

c. Did the program help identify and develop "mitigation measures" as necessary? Were these measures effective?

#### **5 Transferability**

a. Can others adopt this program elsewhere within and/or outside of DOD?

b. Will program results outlive the presence of the specific individual(s) responsible for the program's success?

#### **6 Community Interaction**

a. Did the program interact with the surrounding community?

b. Did the nominee establish volunteer and partnership programs? What were the contributions of these partners?

c. Did the nominee develop public and in-house education programs?

d. Did the program promote public access?

#### **7 Program Breadth**

a. Did the program include the following areas, as applicable to specific award categories:

##### **7.1 Natural Resources Conservation**

a. Ecosystem Management

b. Hunting and Fishing

c. Commercial Forestry

d. Agricultural Out-Leasing

e. Management of Sensitive Ecosystems and Species

f. Soil and Water Conservation

g. Habitat Enhancement, Restoration, and Creation

h. Outdoor Recreation and Public Access

i. Wetlands and Coastal Zone Protection

j. Volunteer and Partnership Programs

##### **7.2 Cultural Resources Management**

a. Historical Buildings and Structures

b. Archaeological Resources

c. Native American Program

d. Curation

e. Awareness and Education

f. Cultural Resources Compliance

##### **7.3 Environmental Quality**

a. Full Environmental Compliance

b. Air Pollution Abatement

c. Water Supply and Waste Water Management

d. Hazardous Materials and Hazardous Waste Management

- e. Spill Prevention, Preparedness, and Planning for Emergency Response
- f. Underground Storage Tank Management
- g. Noise Pollution Abatement
- h. Solid Waste Management
- i. Asbestos, Lead Paint, and Radon Control
- j. Pest Management
- k. Environmental Education and Training
- l. Environmental Planning and Management
- m. Cost Controls and Efficiency of Analysis
- n. Innovations in Procedures and/or Analysis
- o. Monitoring Impacts and Mitigation Measures
- p. Usefulness in the Decision-Making Process

- q. Incorporation of Executive Order 12898, as appropriate.

#### **7.4 Pollution Prevention And Recycling**

- a. Increased Recycling Activities
- b. Reduction in Solid, Hazardous, and Toxic Waste
- c. Use of Substitute Materials
- d. Increased Efficiency in the Use of Energy, Water, and/or Raw Materials
- e. Procurement/Acquisition of Environmentally Sound Products
- f. Life Cycle Cost Analysis.

#### **7.5 Environmental Cleanup**

- a. Involved Affected States, Communities, and Other Stakeholders
- b. Management of Risk Reduction
- c. Full Environmental Compliance
- d. Demonstration/Validation and/or Implementation of Innovative Cleanup Technologies.

## APPENDIX H

### OIL SPILL REPORT (MESSAGE FORMAT)

- 1. Precedence (for messages only).** Provided that prior voice reports have been made both to the US Coast Guard National Response Center and the reporting command's Chain of Command, use "Routine" precedence for Oil Spill Report Messages. If either voice report has not been made, use "Priority" precedence.
- 2. Classification or Special Handling Marks.** Oil Spill Report Messages are unclassified and do not warrant special handling marks unless classified or sensitive business information must be incorporated. Avoid inclusion of such information to the maximum extent possible to allow Oil Spill Report Messages to be handled on a solely unclassified basis.
- 3. Spill Volume Classification:** To better advise the Navy On-Scene Coordinator and Navy leadership of the magnitude of each oil spill, the Subject line of an Oil Spill Report Message should bear a volume estimate of the spill, if known, in the following format:
  - OIL SPILL REPORT, X GALLONS, [ACTIVITY NAME] (MINIMIZE CONSIDERED); or
  - OIL SPILL REPORT, UNKNOWN VOLUME, [ACTIVITY NAME] (MINIMIZE CONSIDERED);or
  - OIL SPILL REPORT, SHEEN SIGHTING (MINIMIZE CONSIDERED).
- 4. Updating Oil Spill Report Messages:** Oil Spill Report Messages should be updated with a follow-up SITREP message as soon as the reporting activity becomes aware of new information concerning the origin, quantity, type, operation under way or cause of the spill. Similarly, *if the final estimate of the amount spilled differs substantially from the amount initially reported*, the reporting activity must send a SITREP update message to all action and info addressees on the original spill message.
- 5. Action and Info Addressees:**
  - FM: Navy Activity or Ship responsible for or discovering the spill
  - TO: Navy On-Scene Coordinator  
Chain of Command
  - INFO: Area Environmental Coordinator  
Host Activity  
CNO WASHINGTON DC//N45//  
CHINFO WASHINGTON DC//JJJ//  
COMNAVSEASYS COM WASHINGTON DC//00C//  
NFESC PORT HUENEME CA//424//  
NAVPETOFF ALEXANDRIA VA//JJJ//

[Add the following Info Addressee for spills into or upon the navigable waters of the United States, its contiguous zone (generally within 12 nautical miles of US shores) and adjacent shorelines.]

COGARD NATIONAL RESPONSE CENTER WASHINGTON DC//JJJ//

**6. Body of Report:** Use the following format for the body of all Oil Spill Report Messages:

UNCLAS//NO5090//

SUBJ: OIL SPILL REPORT, X GALLONS, [ACTIVITY NAME] (MINIMIZE CONSIDERED) or  
OIL SPILL REPORT, UNKNOWN VOLUME, [ACTIVITY NAME] (MINIMIZE  
CONSIDERED) or  
OIL SPILL SHEEN SIGHTING, (MINIMIZE CONSIDERED)

MSGID/GENADMIN/ORIGINATOR//

RMKS/

1. LOCAL TIME AND DATE SPILL [OCCURRED/DISCOVERED].
2. [FACILITY/VESSEL] ORIGINATING SPILL:
  - For Navy ships, list ship name, hull number and unit identification code (UIC).
  - For Navy shore facilities, list facility name and UIC.
  - For non-Navy spills, list name of responsible party, if known.
  - For organizations under contract to Navy, list firm name and contracting Navy activity.
  - If source unknown at time of this report, list only "Unknown" until such time as definitively established.
3. SPILL LOCATION:
  - For spills at sea, list latitude, longitude and distance to nearest land.
  - For spills in port, list port name, host naval command (NAVSTA, Shipyard) and specific location (pier or mooring designation).
  - For spills ashore, list city, state, facility name and specific location (building designation).
4. VOLUME SPILLED IN GALLONS:
  - Estimates must be made by examining loss at source: i.e. sounding tank, calculating flow rate of spill.
  - If amount unknown at time of this report, list only "Unknown" until such time as definitively established.
  - Estimating volume by visual observation of oil on water can be very unreliable.
  - If volume estimate can only be made by visual observation of oil on water, do not report estimate here.
  - If oil/water mixture, indicate percent oil.
5. TYPE OF OIL SPILLED:
  - List whether diesel fuel marine (DFM); naval distillate; jet fuel (JP-4 or 5); aviation/automotive gasoline; automotive diesel; heating fuels (grade 1 or 2, kerosene); residual burner fuel (grade 4, 5 or 6); lubricating oil; hydraulic oil; oil/oil mixture (including slops and waste oil); oil/water mixture (including bilge waste).
  - If type unknown at time of this report, list only "Unknown" until such time as definitively established.

6. OPERATION UNDER WAY WHEN SPILL [OCCURRED/DISCOVERED]:
  - If fueling/defueling, list whether underway or in port by pipeline, truck or barge.
  - Whether conducting internal fuel oil transfer operations (including movement from one storage tank to another); pumping bilges; conducting salvage operations; aircraft operations; or “Other” (specify).
  - If operation unknown at time of this report, list only “Unknown” until such time as definitively established.
7. SPILL CAUSE:
  - Classify the cause of the spill by citing one or more of the following categories and then provide a narrative description of specific spill cause: Structural; electrical; hose; valve/fitting; tank level indicator; oil/water separator/oil content monitor; other equipment (specify component that failed); collision, grounding, or sinking; valve misalignment; monitoring error; procedural/communications error; chronic/recurring; or weather related.
  - If cause unknown at time of this report, list only “Unknown” until such time as definitively established.
8. SLICK DESCRIPTION AND MOVEMENT:
  - Size: length and width (yards or nm) and percentage of that area covered.
  - Color: silver transparent, gray, rainbow, blue, dull brown, dark brown, black, brown-orange mousse.
  - Odor: noxious, light, undetectable.
  - Slick movement: set (degrees true toward) and drift (knots).
9. SPILL ENVIRONMENT:
  - Weather: clear, overcast, partly-cloudy, rain, snow, etc.
  - Prevailing wind at scene: direction (degrees true from), speed (knots), fetch (yards or nautical miles).
  - Air and water temperature: indicate ice cover.
  - Sea state: Beaufort Force number.
  - Tide: high, low, ebb, flood or slack / Current: set (degrees true toward) and drift (knots).
10. AREAS DAMAGED OR THREATENED:
  - Body of water, area or resources threatened or affected.
  - Nature and extent of damage to property, wildlife or other natural resources (if any).
11. TELEPHONIC REPORT TO NATIONAL RESPONSE CENTER [WAS/WAS NOT ] MADE:
  - If not made, provide reason why: beyond 12 nm from US shores, no threat to navigable water, etc.
  - If made, list: DTG of telephonic report; NRC report/case number; name of NRC official taking report; and
  - Navy Command making telephonic report.



12. SAMPLES [WERE/WERE NOT] TAKEN:
  - If taken, identify location(s) from which taken: tanks, hoses, piping, slip, jetty, etc.
  - If taken, identify collecting officer by name, rank and agency.
13. CONTAINMENT METHOD [PLANNED/USED]:
  - If none, state reason.
  - Otherwise, indicate equipment utilized: boom; ship's hull; camel; water spray; chemical agent.
14. SPILL REMOVAL METHOD [PLANNED/USED]:
  - If none, state reason.
  - Equipment planned/used: used: Rapid Response Skimmer or Dip 3001 skimmer; portable skimmer, absorbent materials (oil absorbent pads, chips, etc.); dispersants; vacuum trucks/pumps; other (specify).
15. VOLUME OF PRODUCT RECOVERED IN GALLONS: (Decanted pure product.)
16. PARTIES PERFORMING SPILL REMOVAL:
  - Identify lead organization in charge: Navy Command; USCG; EPA.
  - Identify all other parties involved: commercial firms; supporting Navy activities; State or local agencies.
17. FEDERAL, STATE OR LOCAL REGULATORY ACTIVITY DURING THIS INCIDENT:
  - Identify by name and agency any official attending on-scene or making telephonic inquiry.
  - Note whether officials boarded vessel and include date, time and spaces inspected.
18. ASSISTANCE REQUIRED/ADDITIONAL COMMENTS:
19. LESSONS LEARNED: How could this spill have been avoided?
20. ACTIVITY CONTACT FOR ADDITIONAL INFORMATION: List name, rank/rate, command, code, DSN and/or commercial telephone numbers. //

## APPENDIX I

### HAZARDOUS SUBSTANCE RELEASE REPORT (MESSAGE FORMAT)

**1. Precedence (for messages only).** Provided that prior voice reports have been made to the US Coast Guard National Response Center and the reporting command's Chain of Command, use "Routine Precedence" for Hazardous Substance (HS) Release Report Messages not classified as an "Extremely Hazardous Substance." If either voice report has not been made, use "Priority Precedence". If Extremely Hazardous Substance, always use "Priority Precedence."

**2. Classification or Special Handling Marks.** HS Release Report Messages are unclassified and do not warrant special handling marks unless classified or sensitive business information must be incorporated. Avoid inclusion of such information to the maximum extent possible to allow HS Release Report Messages to be handled on a solely unclassified basis.

**3. Correcting HS Release Report Messages:** HS Release Report Messages should be updated with a follow-up SITREP Message as soon as the reporting activity becomes aware of new information concerning the origin, amount, nature of substance, type of operation at source or cause of release. Similarly, *if the final estimate of the amount released differs substantially from the amount initially reported*, the reporting activity must send a SITREP update message to all action and info addresses on the original message.

**4. Action and Info Addressees:**

FM: Navy Activity or Ship responsible for or discovering the spill  
TO: Navy On-Scene Coordinator  
Chain of Command  
INFO: Area Environmental Coordinator  
Host Activity  
CNO WASHINGTON DC//N45//  
CHINFO WASHINGTON DC//JJJ//  
COMNAVSEASYS COM WASHINGTON DC//00C//  
NFESC PORT HUENEME CA//424//  
LEGSVSSUPGRU OGC//ELO//

[Add the following Info Addressee for releases into or upon the navigable waters of the United States, its contiguous zone (generally within 12 nautical miles of US shores) and adjacent shorelines.]

COGARD NATIONAL RESPONSE CENTER WASHINGTON DC//JJJ//

**5. Body of Report:** Use the following format for the body of all HS Release Report Messages:

UNCLAS//N05090//  
SUBJ: HAZARDOUS SUBSTANCE RELEASE REPORT (REPORT SYMBOL OPNAV 5090-3) (MIN:  
CONSIDERED)  
MSGID/GENADMIN/ORIGINATOR//  
RMKS/  
1. LOCAL TIME AND DATE RELEASE [OCCURRED/DISCOVERED]:

2. [FACILITY/VESSEL] ORIGINATING RELEASE :
  - For Navy ships, list ship name, hull number and unit identification code (UIC).
  - For Navy shore facilities, list facility name and UIC.
  - For release occurring during transportation, list name of activity responsible for shipment.
  - For non-Navy spills, list name of responsible party, if known.
  - For organizations under contract to Navy, list firm name and contracting Navy activity.
  - If source unknown at time of this report, ***list only "Unknown"*** until such time as definitively established.
3. RELEASE LOCATION:
  - For release at sea, list latitude, longitude and distance to nearest land.
  - For release in port, list port name, host naval command (NAVSTA, Shipyard) and specific location.
  - For release ashore, list city, state, facility name and specific location (building designation).
  - For release during transportation, give exact location (highway mile marker or street number and city).
4. AMOUNT RELEASED:
  - Use convenient units of weight or volume (kg, lb., gallons, liters, etc.).
  - For continuous release, estimate rate of release and amount left in container.
  - Estimates should be made by examining loss at source: sounding tank, calculating flow rate of spill.
  - ***Unreliable estimates of volume using visual observation of HS on water may not be reported here.***
  - If amount unknown at time of this report, ***list only "Unknown"*** until such time as definitively established.
5. HAZARDOUS SUBSTANCE RELEASED:
  - If Extremely Hazardous Substance, headline this paragraph "EXTREMELY HAZARDOUS SUBSTANCE RELEASED:" See chapter 10, subsection 10-4.2 for additional notification requirements.
  - Consult container labels, user directions, reference books, expert advice.
  - Provide chemical/product names, formula, synonym, physical/chemical characteristics, and inherent hazards.
  - "Container label identifies substance as acrylonitrile. Synonyms: cyanethylen, vintleyanide. Characteristics/hazards: poisonous liquid and vapor, skin irritant, highly reactive/flammable."
  - Describe appearance, physical/chemical characteristics, actual/potential hazards observed. For example:
    - "Substance released is colorless to light yellow unidentified liquid; highly irritating to eyes and nose; smells like kernels of peach pits; vaporizing quickly, posing ignition problem."
6. TYPE OF OPERATION AT SOURCE: Plating shop, painting shop, hazardous waste (HW) facility, truck, ship, pipeline, ship rebuilding, entomology shop, etc.
7. CAUSE OF RELEASE:
  - Provide narrative description of specific cause of release.
  - Account for personnel error, equipment failure, etc. directly contributing to release.
  - For example: "Railing supporting 55-gal drums on a flatbed truck gave way because it was not securely fastened, causing seven drums to fall and rupture."
  - If cause unknown at time of this report, ***list only "Unknown"*** until such time as definitively established.

8. TYPE OF CONTAINER FROM WHICH SUBSTANCE ESCAPED:
  - 55-gal drums, 5-lb. bags, tank truck, storage tank, can, etc.
  - Estimate number of containers damaged or dangerously exposed.
9. RELEASE ENVIRONMENT:
  - Describe scene of release.
  - Include information on physical characteristics, size and complexity of release and weather conditions.
  - For Example: "Solvent released formed shallow pool covering area about 30 ft by 45 ft of bare concrete. Solvent slowly running into storm drain. Pool emitting highly toxic, flammable vapors. Dark clouds threatening rain. Light wind drifting vapors northbound to residential area about 30 ft above ground."
10. AREAS DAMAGED OR THREATENED:
  - Describe actual and potential danger or damage to surrounding environment,
  - Identify body of water, area or resources threatened or affected.
  - Nature and extent of damage to property, wildlife or other natural resources (if any).
11. NOTIFICATIONS MADE AND ASSISTANCE REQUESTED:
  - List all organizations informed of release within and beyond Navy jurisdiction.
  - Include Navy, federal, state, and local authorities, response teams, fire departments, hospitals, etc.
  - Specify type of assistance requested from these organizations.
  - If telephonic report to National Response Center made, list: DTG of telephonic report; NRC report/case number; name of NRC official taking report; and Navy Command making telephonic report.
12. FIELD TESTING:
  - Indicate findings and conclusions as to concentration, pH, etc.
13. CONTROL AND CONTAINMENT ACTIONS [PLANNED /TAKEN]:
  - If none, explain why.
  - Specify method used to control and contain release.
  - For example: "Gas barriers used to control and contain vapor emissions. Runoff contained by excavating ditch circumscribing affected area."
14. CLEAN-UP ACTIONS [PLANNED /TAKEN]:
  - If none, explain why.
  - Identify on-site or off-site treatment, method used, parties involved in clean-up/removal and disposal area.
  - For example: "No clean-up action taken. Toxic vapors present, potential danger to clean-up crew. Contaminated soil will be excavated and shipped by NAS personnel to Class I HW disposal site in Portstown, CA when conditions allow."
15. AMOUNT OF SUBSTANCE RECOVERED [VOLUME/WEIGHT] (Pure product.):
16. PARTIES PERFORMING [CONTAINMENT/CLEAN-UP] ACTIVITIES:
  - Identify lead organization in charge: Navy Command; USCG; EPA.

- Identify all other parties involved: commercial firms; supporting Navy activities; State or local agencies.
17. FEDERAL, STATE OR LOCAL REGULATORY ACTIVITY DURING THIS INCIDENT:
- Identify by name and agency any regulatory official attending on-scene or making telephonic inquiry.
  - Note whether officials boarded vessel and include date, time and spaces inspected.
18. ASSISTANCE REQUIRED/ADDITIONAL COMMENTS.
19. LESSONS LEARNED: How could this release have been avoided?
20. ACTIVITY CONTACT FOR ADDITIONAL INFORMATION: List name, rank/rate, command, code, DSN and/or commercial telephone numbers.//

## APPENDIX K

### AFLOAT ENVIRONMENTAL CHECKLIST

The following checklist is to guide afloat commands in the event they might want to evaluate command environmental compliance procedures, practices, and training. The President of the Board of Inspection and Survey shall use this checklist in conducting environmental compliance oversight inspections as part of regular INSURV inspections and when conducting intervening environmental protection assessments between INSURV inspections.

Indicate the answer to each of the questions below by an X. If a question is not applicable to the command, put NA in the YES block. Explain or describe the conditions warranting any NO answer in the space at the end of the checklist or on additional sheets, if necessary. An underlined question does not apply to all ships, but only to the category indicated.

The chapter 19 reference is in parenthesis at the end of the question.

	YES	NO
<b><u>TRAINING</u></b>		
1. Is there a designated Afloat Environmental Protection Coordinator who is trained and knowledgeable? (19-2.2.1)		
2. Are all hands trained in environmental protection in I Division or School of the Boat as required by paragraph 19-2.2.7? (19-2.2.7)		
3. Are ship watch officers responsible for authorizing overboard disposal of shipboard wastes trained on prohibited zones for discharge as part of their watch qualification? (19-2.2.7b)		
4. Are personnel who operate or maintain sewage and graywater disposal or transfer equipment trained on the proper procedures for sewage or graywater disposal, including hookup and transfer of sewage or graywater to shore facilities and at sea discharge restrictions? (19-3.4)		
5. Have personnel assigned to supervise sewage or graywater disposal operations completed the Shipboard Sewage Collection, Holding, and Transfer (CHT) course (K-652-2141) and PQS? (19-3.4)		
6. Have all personnel who operate or maintain sewage or graywater disposal equipment completed the Shipboard Sewage Collection, Holding, Transfer (CHT), and Treatment PQS, NAVEDTRA 43199-C, prior to assignment to those duties? (19-3.4)		
7. Are personnel whose watch duties may result in air pollution (for example, diesel engine operators, boilermen, or gas turbine operators) trained on minimizing air pollution as a part of their watch qualification? (19-4.3.3)		
8. Are personnel whose task assignments may result in air pollution (for example, topside painters or users of volatile solvents) trained on the proper use of the material to minimize the release of pollutants? (19-4.3.3)		

	YES	NO
9. Have the AC&R technicians who perform maintenance on air conditioning and refrigeration equipment received EPA certification on handling, recovery and recycling ozone depleting substances (ODSs) and training on ODS regulations and spent/recyclable ODS labeling? (19-4.3.3)		
10. Are personnel who work with other ODSs (e.g., halons and solvents) or perform maintenance on equipment containing such substances trained on methods to prevent release? (19-4.3.3)		
11. Have personnel assigned to operate the incinerator completed the Incinerator Operator PQS, NAVEDTRA 43558? (19-4.3.3)		
12. Are personnel who operate or maintain waste oil and oily waste holding, processing, disposal, or transfer equipment trained on the proper procedures for oily waste disposal, including hookup and transfer of waste oil and oily waste to shore facilities and at sea discharge restrictions? a. Have personnel assigned to <b>supervise</b> oily waste processing and disposal operations completed the Oil Pollution Abatement (OPA) Equipment Operation and Maintenance course, K-652-2196? b. Have all personnel who <b>operate or maintain</b> oil processing, transfer or disposal equipment completed the Oil Spill Control and Removal Equipment PQS, NAVEDTRA 43195-B, before assignment to those duties? (19-5.5)		
13. Are personnel who handle, store and dispose of HM trained per OPNAVINST 5100.19C, chapter B3? (19-6.5)		
14. Are personnel responsible for handling ship's garbage trained on the discharge restrictions applicable to the waste? (19-7.4)		
15. Are personnel responsible for the supervision and approval of overboard disposal of solid waste trained on the requirements for this waste category? (19-7.4)		
16. Have personnel assigned to operate and maintain solid waste processing equipment (plastics waste processors, shredders, and pulpers), completed the Plastics Processor Computer-Based Training (CBT), A-690-0003, and the Pulper/Shredder CBT, A-690-0004, interactive courseware, as applicable? (19-7.4)		
17. Are personnel responsible for processing and disposing of shipboard medical waste trained to ensure such actions comply with the requirements governing this waste? (19-8.4)		
18. Has at least one OHS spill response drill for each duty section been held annually? (19-9.3a)		
19. Has the ship trained in-port watchstanders and command duty officers on in port OHS spill response procedures, the ship's SPC, and local notification requirements prior to assignment? (19-9.3b)		
20. Is at least one petty officer in each inport fireparty and each repair party qualified on Watchstation 304, Oil/Hazardous Material (Substance) Spill Response Scene Leader, in the Hazardous Material/Environmental Protection Programs Afloat PQS, NAVEDTRA 43528-A? (19-9.3c)		

	YES	NO
21. <u>For submarines only</u> Are type commander requirements for Watchstation 304 of the PQS followed so that appropriately qualified individuals are present at the scene of HM or oil spill? (19-9.3c)		
<b><u>EQUIPMENT OPERATION</u></b>		
22. Does the ship have a Marine Sanitation Device (MSD) of the type appropriate to its status and year of construction? Is the MSD certified per NAVSEAINST 9593.1, and is it operable? (19-3.3.1)		
23. Does the ship observe the following procedures: a. Does the ship operate and maintain the installed MSD to prevent the overboard discharge of untreated or inadequately treated sewage, or any waste derived from sewage (e.g., sludge), within 0-3 nm of the U.S. shore? b. Does the ship operate the MSD to collect only sewage while operating or transiting within 3 nm of shore? c. In port, does the ship collect graywater in the installed MSDs or graywater collection systems (if so fitted), and pump the waste ashore? d. If the ship operates in fresh water other than the Great Lakes, does it refrain from discharging treated or untreated sewage into freshwater lakes, freshwater reservoirs or other freshwater impoundment, or into rivers not capable of interstate navigation? e. With reference to d. above, is the ship modified to preclude <i>accidental</i> discharge? f. Are used solvents or other industrial wastes prohibited from being discharged to MSDs or graywater collection systems or dumped down sinks or deck drains? g. <u>For COMSC ships only</u> If a ship is equipped with USCG-approved Type II MSD, does it discharge sewage via the installed MSD? (19-3.3.3)		
24. While visiting non-Navy ports, does the ship request sewage reception facilities (barge or installed sewage hookups) in LOGREQs or other pertinent documentation? When in port, does the ship divert food service garbage grinders to the MSD system for discharge ashore? (19-3.3.3)		
25. Is installed Oil/Water Separator (OWS) and Oil Content Monitor (OCM) fully operable and routinely used? Is oil pollution abatement equipment certified per NAVSEAINST 9593.2?		
26. <u>For a ship equipped with OWS and OCM</u> Are bilgewater discharges limited to 15 ppm oil worldwide? If operating conditions prevent achieving less than 15 ppm, does the ship limit discharges to less than 100 ppm and only when beyond 12 nm from the nearest land? (19-5.4.2a)		
27. <u>For a ship equipped with Oil/Water Separator or Bilge Water Processing Tanks (BWPT) but without OCM,</u> is all machinery space bilge water processed through an OWS or BWPT before discharge? (19-5.4.2b)		



	YES	NO
28. <u>For a ship equipped without OWS but with an Oily Waste Holding Tank (OWHT):</u> a. To the maximum extent possible, without endangering the ship or impairing its operations or operational effectiveness, is all oily bilge water directed to the OWHT for shore disposal? b. Is only the bottom, water phase pumped overboard, ensuring that the upper, oily phase is not pumped, except to a shore collection facility? c. Are such discharges of oily bilge water made only while the ship is underway? (19-5.4.2c)		
29. <u>For a ship equipped with neither an operating OWS nor OWHT:</u> Is oily bilge water retained for shore disposal to the maximum extent possible, without endangering the ship or impairing its operations or operational effectiveness? (19-5.4.2d)		
30. <u>For submarines without BWPTs:</u> Is bilge water discharged, after allowing for adequate separation time? Is only the bottom, non-oily water phase of bilge water pumped overboard? (19-5.4.2e)		
31. Is oil contamination of bilge water minimized? (19-5.4.4a(1))		
32. Does the ship refrain from use of emulsifying bilge cleaners? (19-5.4.4a(2))		
33. While in port, does the ship dispose of bilge water only by pumping to a permanent shore reception facility, using its installed OWS, or pumping to a ship waste offload barge (SWOB), and use eductors only in an emergency? (19-5.4.4a(3))		
34. Is waste/used oil disposed of in port and not at sea; collecting and storing it separately for eventual shore reclamation, keeping hydraulic and synthetic oils separate from other lubricants? (19-5.4.4b)		
35. Does the ship conduct fuel operations in port or restricted waters during daylight hours only, with trained personnel, using topside watches in communication with pumping stations, using check-off lists, continuously monitoring each tank level while filling it, and conduct fueling operations only after informing either the commanding officer, command duty officer or officer of the deck? (19-5.4.4c)		
36. Does the ship refrain from use of eductors to strip fuel or cargo tanks? Does the ship avoid stripping tanks overboard, but instead strip to contaminated fuel settling tanks? (19-4.4d)		
37. Does the ship properly dispose of oil-contaminated solid waste? (19-5.4.4f)		
38. <u>For ships equipped with incinerators and or rag washers</u> a. Are rags burned only if lightly petroleum-soiled and when beyond 12 nm from shore? b. When using the rag washer, is the effluent directed to the waste oil tank or to pierside retention facilities for processing? c. When at sea beyond 12 nm from land, is rag washer effluent directed to the rag washer mixing tank prior to educting overboard? (19-5.4.4f)		
39. Unless allowed by appendix L, does the ship refrain from discharging HM overboard within 200 nm of land? (19-6.4.1a)		

	YES	NO
40. Is chapter 19, part 19-6.4. pertaining to ship-to-shore transfers and ship to ship transfers of excess HM or used HM followed? (19-6.4.1)		
41. Do the ships plastics processor, pulper and metal/glass shredder operate as designed?		
42. Are the plastics processor, pulper and metal/glass shredder operated and is processed material handled per chapter 19, part 19-7.3? (19-7.3)		
43. If any solid waste equipment is inoperable, has a CASREP been submitted?		
44. <u>For submarines:</u> Does the compactor operate fully as designed? If it does not, is there a CASREP?		
45. Are responsible personnel aware of requirement to report discharges of solid waste into "in effect" special areas? (19-7.3.3)		
46. Is the autoclave functional so that medical personnel may sterilize medical waste? (19-8.3)		
47. Does the medical department representative understand medical waste management requirements? (19-8.3)		
48. Does the ship possess Mk II Oil Spill Containment and Cleanup Kits, AEL 2-550024006 for overboard oil and hazardous substance spill response? (19-9.2.4)		
49. Does the ship possess Hazardous Material Spill Response Kits, AEL 2-550024007 for spills that occur on board the ship? (19-9.2.4)		
50. Are the commanding officer and command duty officers familiar with oil and hazardous spill cleanup and reporting requirements? (19-9.2)		
51. Do command duty officers know how to contact the NOSC? (19-9.2.8)		
52. Does the ship have pre-formatted, correctly addressed messages, modeled on Appendices H and I, prepared and available for OHS spills? (19-9.2.8)		
53. Are solvents, paints, fuels, lubricants and chemicals prohibited in OPNAVINST 5100.19C not ordered or used? (19-4.3.2c)		
54. Are only properly trained personnel equipped with appropriate personal protective equipment permitted to perform shipboard emergency or operational readiness repairs on thermal insulation containing asbestos? (19-4.3.2d)		
55. Is asbestos material removed during shipboard repair actions performed by ship's force properly containerized and disposed of without release of asbestos fibers into the environment? (19-4.3.2c)		
56. <u>For Navy and COMSC ships with AC&amp;R systems with an installed refrigerant charge of more than 50 pounds that contain ODSs such as CFC-11, CFC-12, or CFC-114 or ODS substitute material such as HFC-134a or HFC-236fa :</u> Does the ship meet the following annual performance goals: (1) Maintain a maximum annual leakage rate of not more than 15 percent of total installed refrigerant charge of air conditioning equipment? (2) Maintain a maximum annual leakage rate of not more than 35 percent of total installed refrigerant charge of ship stores and cargo refrigeration? (19-4.3.2e)		
57. Are ODSs recovered prior to maintenance on air conditioning and refrigeration systems and fire protection systems? (19-4.3.2f)		

	YES	NO
58. Do personnel who perform maintenance on AC&R systems keep records of maintenance actions, names of technicians performing work, pounds of refrigerant removed and pounds of refrigerant added and retain them for 3 years? (19-4.3.2g)		
59. When replacing inoperable galley refrigeration equipment, is new equipment EPA-approved (complying with their significant new alternatives policy (SNAP) program), using refrigerant with an ozone depletion potential (ODP) of 0.05 or less? (19-4.3.2j)		
60. If the ship has had an overhaul availability at Navy NESHAP-affected source sites, were records of ships' force marine coating use maintained <i>for coatings distributed from ships' stores</i> ? (Hazardous Material Inventory Control System (HICS) may be used to keep these records.) (19-4.3.2k(2))		
61. If the ship has had an overhaul availability at a commercial NESHAP-affected source site, was the use of paint recorded and reported regardless of availability type or operational status? (19-4.3.2k(2))		
62. Are paint lockers labeled with placards stating, "Thinning of marine coatings/paints is prohibited." (19-4.3.2k(5))		
63. Are the following paint work practices observed: (a) paint spills are minimized, (b) only intact and leak free paint containers are stored, and (c) paint containers are stored when not in use? (19-4.3.2k(7))		
64. Is a monthly report of daily coating use delivered by the seventh day of the month following use or before departure, if departing before the end of the month or after a short visit (i.e. several days) to the affected source site (Navy shore activity) or, when located at a commercial affected source site, to the appropriate SUPSHIP office? (19-4.3.2k(3))		
<b><u>PROGRAM COMPLIANCE AND EFFECTIVENESS</u></b>		
65. Is the ship operated and maintained to conform with applicable State and local air pollution emission regulations and HM regulations? (19-4.3.1)		
66. Does the ship comply with the guidelines, standards and procedures of chapter 19 of this instruction? (chapter 19)		
67. Are periodic inspections (at least quarterly) by senior medical department personnel conducted to maintain sanitary and hygienic conditions of MSD systems and operational practices? Are periodic sanitation and hygiene inspections of solid waste processing equipment conducted? (19-14.10f)		
68. Are appropriate health and sanitation precautions posted as required by OPNAVINST 5100.19C ; General Specifications for Ships of the United States Navy (GENSPECS); Naval Ships Technical Manual, chapter 593; and NAVMED P-5010-7? (19-14.10g)		
69. Are sewage discharges within 0-3 nm from U.S. shores reported? (19-14.10h)		
70. If there are any conditions or system/equipment malfunctions that could result in unlawful air pollutant emissions, are they reported to the fleet commander? (19-14.10i)		

	YES	NO
71. If there are any conditions or system/equipment malfunctions that could necessitate oily waste, HM or solid waste discharge into waters in which discharge is restricted, are they reported to the fleet commander? (19-14.10j)		
72. Are the date, time of occurrence, ship location at the beginning and end of the incident, substance discharged, quantity discharged and the cause of the discharge for any oily waste discharge that causes a sheen recorded in the engineering log or equivalent oil record book? (19-14.10k)		
73. Do personnel comply with OPNAVINST 5100.19C requirements for HM handling, packaging, storing, labeling, treating and disposal? Is an HM coordinator appointed by the commanding officer? (19-14.10l)		
74. Is one or more shipboard action officers designated to be responsible for shipboard spill/ release contingencies planning and response? (19-14.10m)		
75. Does the ship have an OHS Spill Contingency Plans (SCPs), that is coordinated with the cognizant NOSC plan? (19-14.10n)		
76. Are personnel aware of and do they understand the OHS SCPs?		
77. Are OHS spills reported as prescribed in paragraph 19-9.2.5 through 19-9.2.8? (19-14.10p)		
78. Is immediate action taken to contain, control and mitigate any spills caused by the ship? (19-14.10q)		
79. Is an officer or petty officer appointed to oversee dry-dock operations to ensure that industrial waste and sewage collection and treatment systems are properly operated and maintained and that ship-to-shore transfers of the waste are handled in a safe and effective manner. (19-14.10r)		
80. Is used and excess HM offloaded, to the maximum extent feasible, to a Navy or other public facility prior to entering a private shipyard for an availability?. Does the ship also offload HM not anticipated for use by ship's force during the availability before entering the private shipyard? (19-14.10s,t)		
81. Does the ship collect the debris, dust and residual materials from the paint removal, to the maximum extent feasible, and properly dispose of these materials ashore? (19-14.10w)		
82. Is the ship aware of the requirement to report to the chain of command, cognizant REC, area environmental coordinator and CNO (N45) any regulatory request that the Navy apply for permits involving ship discharges or implement measures regarding ship discharges? Do responsible officers understand they should not make agreements with environmental agencies regarding ship discharges without CNO (N45) approval? (19-14.10x)		
83. Is the loading of ballast water in potentially polluted areas or within 3 nm from shore and the flushing of ballast tanks to rid them of possible pollutants or unwanted species recorded in the engineering log? (19-14.10y)		
84. If plastic discharges have occurred, are they properly recorded in the log? Are plastic discharges personally approved by the commanding officer? (19-14.10z)		

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	YES	NO
85. Does the ship avoid deliberately harassing marine mammals and consider marine mammal protection during ship operations and planning? (19-14.10aa)		
86. Are the requirements of OPNAVINST 5100.19C and NAVSEA PCB advisories followed for all activities associated with PCBs, PCB-containing materials or systems potentially contaminated with PCBs (e.g., ventilation systems that employ PCB-containing felt gaskets)? (19-14.10bb)		
87. Are only marine paints that meet VOC content standards of NSTM, chapter 631, Table 3-7 used? (19-14.10ee)		
88. Are non-compliant paints removed from shipboard stores and returned to the supply system as excess HM as soon as possible? (19-14.10ee)		

## APPENDIX L

(R)

### DISPOSAL OF SHIPBOARD HAZARDOUS MATERIAL

The HM listed in appendix L are representative of materials used during conduct of normal shipboard operations and in performance of planned maintenance and general housekeeping procedures. If disposal guidance is sought for a material not listed in this appendix, contact your ship's HM coordinator.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Acid, spent</b>	Cleaning.	Acetic, citric, hydrochloric, sulfuric, and sulfamic acids.	Carefully neutralize with a weak base, dilute and flush overboard beyond 12 nm of shore using large amounts of water; within 12 nm containerize for shore disposal. See NSTM chapter 593, Pollution Control for spent acid disposal procedures.
<b>Aerosol cans</b>	Empty paint, lubricant deodorant, and shaving cream cans.	Flammable products, flammable propellants (propane, butane), oxidizer (nitrous oxide).	<p>If the ship is equipped with a NAVSEASYSKOM-approved aerosol puncturing/draining device, puncture and drain the exhausted aerosol container. The container shall be marked "empty" and treated as an empty HM container.</p> <p>If the ship is <u>not</u> equipped with a NAVSEASYSKOM-approved aerosol puncturing/draining device, containerize for shore disposal.</p>
<b>Alkali, spent</b>	Cleaning, deoxidizing.	Sodium hydroxide, potassium hydroxide.	Carefully neutralize with a weak acid, dilute and flush overboard beyond 12 nm of shore using large amounts of water; within 12 nm containerize for shore disposal. See NSTM chapter 593, Pollution Control for spent alkali disposal procedures.
<b>Asbestos containing materials</b> <i>(to be removed by properly trained personnel equipped with appropriate personal protective equipment only.)</i>	Thermal insulation, pipe lagging, flooring tile, safety curtains, gasket and packing materials.	Asbestos.	Dispose in accordance with requirements set forth in OPNAVINST 5100.19C, chapter B1.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Batteries</b>			
<b>Lead-acid batteries</b>	Propulsion systems auxiliary lighting, communication and power systems.	Lead, lead sulfate, lead dioxide, antimony, sulfuric acid electrolyte.	Containerize for shore disposal. Do not empty electrolyte from battery.
<b>Alkaline batteries:</b> Nickel-cadmium Silver-zinc Nickel-iron Silver-cadmium Nickel-zinc	Auxiliary power systems, power supply for portable equipment.	Nickel, silver, zinc, cadmium, potassium hydroxide electrolyte.	Containerize for shore disposal. Do not empty electrolyte from battery.
<b>Dry cell batteries:</b> Lelanche cells Mercury cells Low-temperature cells	Power supply for portable equipment.	Manganese dioxide, mercuric oxide, zinc.	Containerize for shore disposal.
<b>Lithium batteries</b>	Power supply for portable equipment.	Lithium, acetonitrile.	Containerize for shore disposal.
<b>Biocide, VANTOCIL IB®</b>	Water from MK41 vertical launch deluge system.	Polyhexamethalene biguanide hydrochloride, sodium hypochlorite.	Overboard discharge permitted beyond 25 nm of shore. In port, containerize for shore disposal.
<b>Boiler wastewater</b>	Boiler blowdown, boiler water, continuous boiler water treatment tank.	Trisodium and disodium phosphate, hydrazine, ethylenediamine-tetraacetic acid (EDTA).	Overboard discharge of blowdown effluents and boiler water permitted** inside 12 nm. Continuous boiler feedwater treatment tank contents or diluted 7 percent hydrazine solution may be discharged outside 50 nm of shore. 7 percent hydrazine stock solution must be disposed of ashore.
	Boiler treatment chemicals	Anhydrous disodium phosphate, trisodium phosphate dodecahydrate, trisodium EDTA, 7 percent hydrazine, caustic soda	Containerize excess boiler water treatment chemicals for shore disposal. 7 percent hydrazine stock solution must be disposed of ashore.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Boiler wastewater (continued)</b>	Boiler water/feedwater test chemicals.	Nitric acid, ethylenediamine-tetraacetic acid (EDTA), mercuric nitrate, potassium chloride, phenolphthalein, methyl purple, chloride indicator, hydrazine ampoules, caustic soda, oxygen ampoules, molybdate reagents, hardness indicator, hardness buffer, dimethylglyoxime.	Containerize excess reagents (including oxygen and hydrazine ampoules) and samples containing mercuric contaminated wastewater for shore disposal. If available, process mercuric samples through ion exchange cartridge. Overboard discharge of cartridge effluent permitted. Containerized exhausted cartridges for shore disposal. Boiler water/feedwater samples, except samples containing mercuric compounds, discharge overboard permitted outside 12 nm of shore
	Boiler waterside cleaning solutions.	Ethylenediaminetetraacetic acid (EDTA), citric acid and sulfamic acid.	Overboard discharge permitted beyond 50 nm of shore. In port, offload to tank, barge, or truck.* Offloading to bilge and shore bilgewater collection system is not permitted.
	Boiler layup solutions	Hydrazine/morpholine, sodium nitrate	Overboard discharge permitted beyond 50 nm of shore. In port, offload to tank, barge, or truck. Offloading to bilge and shore bilgewater collection system is not permitted.* For hydrazine/morpholine layup, boiler light-off with subsequent steaming direct from layup permitted. Refer to NSTM chapter 220, Volume2, Boiler Water/ Feedwater Test and Treatment for details.
	Acid cleaning solutions.	Hydrochloric, sulfamic, and citric acids.	Overboard discharge not permitted. In port, offload to tank, barge, or truck. Offloading to bilge and shore bilgewater collection system is not permitted. *

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.



Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Boiler wastewater (continued)</b>	Passivator solutions.	Sodium nitrate.	Overboard discharge not permitted. In port, offload to tank, barge or truck. Offloading to bilge and shore bilgewater collection system is not permitted.*
	Boilout and degreasing solutions.	Trisodium phosphate, sodium metasilicate, nonionic wetting agent, degreaser.	In port, offload to tank, barge, or truck. Offloading to bilge and shore bilgewater collection system is not permitted.*
	Waterjet wastewater	Sodium nitrate	Overboard discharge permitted outside 50 nm of shore. In port, offload to tank, barge or truck. Offloading to bilge and shore bilgewater collection system is not permitted.*
	Feedwater and mercuric sample demineralizer resins	Ion exchange resin with absorbed metal ions (including mercury).	Containerize for shore disposal as used hazardous material.
<b>Canisters</b>			
<b>Battery water purification Canister</b>	Cation exchanger, mixed bed exchanger.	Ion exchange resin with adsorbed metal ions.	Containerize for shore disposal.
<b>Used/expired OBA canisters</b>	Damage control operations .	Potassium superoxide, sodium chlorate.	Label and containerize for shore disposal. <b>Contact with oil, grease, or water during storage is prohibited.</b> Follow guidelines within NSTM chapter 077, Personal Protective Equipment.
<b>Chemical Light Sticks</b>	Underway replenishment operations	Tert-Butyl Alcohol, Dimethylphthalate, Dibutyl Phthalate, Hydrogen Peroxide	Containerize for shore disposal.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
Distilling plant cleaning wastes	Off-line distilling plant chemical cleaning.	Citric acid, sulfamic acid, disodium EDTA, tetrasodium EDTA, trisodium phosphate.	In port, offload to tank, truck, or barge. Offloading to bilge and shore bilgewater collection system is not permitted.*
	On-line distilling plant chemical cleaning.	Citric acid, sulfamic acid, disodium EDTA, tetrasodium EDTA, trisodium phosphate.	Overboard discharge permitted beyond 50 nm of shore. In port, offload to tank, truck, or barge. Offloading to bilge and shore bilgewater collection system is not permitted.*
Film processing wastes	Color film	Continuous processor effluent, small quantities of processing liquids.	Hydroquinone, sodium thiosulfate
		Excess film, batch quantities of developer, fixer and intensifier solutions.	Hydroquinone, sodium thiosulfate, cellulose acetate.
	Black & white film	Continuous processor effluent, stop bath, photo-flo, detergents and hardener solutions.	Acetic and sulfuric acids, potassium chrome alum.
		Excess film, batch quantities of developer and intensifier solution.	Hydroquinone, ethanolamine, diethylene glycol, cellulose acetate.
		Fixer solutions	Sodium thiosulfate, silver, halides
			Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. <b>Do not discharge to CHT tank.</b>
			Containerize for shore disposal
			Overboard discharge permitted beyond 12 nm of shore. Within 12 nm and in port, containerize for shore disposal if facilities are available. <b>Do not discharge to CHT tank.</b>
			Containerize for shore disposal
			Containerize for shore disposal. If available process fixer through silver recovery unit. Overboard discharge of unit effluent permitted beyond 12 nm of shore. In port, containerize effluent for shore disposal.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Film processing wastes (continued)</b>  <b>Black &amp; white film (continued)</b>	Fixer solutions (continued)	Sodium thiosulfate, silver, halides	<b>For submarines:</b> Containerize fixer solutions for shore disposal at all times.
<b>Emergency Escape Breathing Devices (EEBDs)</b>	Emergency Escape Operations	Sodium Chlorate, barium peroxide, iron, lithium hydroxide, potassium perchlorate	Label and containerize for shore disposal. Contact with oil, grease, or water during storage is prohibited. Follow guidelines within NSTM, chapter 077, Personal Protective Equipment.
<b>Firefighting materials</b>	Firefighting, testing of fire-fighting equipment.	AFFF (perfluorocarbon compounds mixed with polyoxyethylene compound).	Overboard discharge permitted beyond 12 nm of shore, preferably while ship is underway. In port and within 3 nm of shore, discharge to tank, barge or truck.* Between 3 to 12 nm overboard discharge permitted with minimum 12-knot speed.
<b>Fluorescent light bulbs, other light bulbs containing mercury</b>	Normal shipboard operation.	Mercury.	Retain for shore disposal.
<b>Greases</b>	Machine maintenance, motors, roller bearings.	Greases and antisieze compounds such as: MIL-G-18458; MIL-G-21164; MIL-G-24139; MIL-L-15719; DOD-G-24508	Containerize for shore disposal.
<b>Hazardous material contaminated items</b>  <b>Contaminated sorbents, rags, unrecoverable personal protective clothing</b>	Normal ship maintenance operations, spill response operations.	Items contaminated with hazardous materials that must be containerized for shore disposal (find specific contaminants in this appendix to learn if containerization is required)	Containerize for shore disposal.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

<b>Shipboard Hazardous Material Type</b>	<b>Examples of Generation Sources</b>	<b>Examples of Associated Hazardous Materials</b>	<b>Authorized Disposal Methods</b>
<b>Hazardous material contaminated items (continued)</b>			
<b>Contaminated sorbents, rags, personal protective clothing (continued)</b>	Normal ship maintenance operations, spill response operations.	Items contaminated with hazardous materials that may be discharged overboard (find specific contaminants in this appendix to learn if overboard discharge is permitted).	Jettison beyond 25 nm or specified disposal distance in this table, whichever is greater. Discharged material must be negatively buoyant. Containerize for shore disposal if within 25 nm or disposal restriction distance of land.
<b>Empty hazardous material containers</b>	Cleaning operations.	Containers with residual hazardous material.	Follow guidance set forth in OPNAV P-45-114-95, CNO Policy Guide for Shipboard Hazardous Material Container Disposal.
<b>Hydraulic fluids</b>			
<b>Petroleum-based hydraulic Fluids</b>	Machinery, heavy lift elevators, trucks.	Fluids in accordance with MIL-H-17672, MIL-L-17331, MIL-F-17111, MIL-H-5606	Hold for shore disposal. Keep separate from synthetic hydraulic fluids.
<b>Synthetic hydraulic fluids</b>	Aircraft elevators, weapons handling systems, some ballast valve operating systems and replenishment-at-sea systems.	Fluids in accordance with MIL-H-19457 contain tertiary butylated triphenyl phosphate.	Hold for shore disposal. Keep separate from petroleum hydraulic fluids.
	Catapult retracting engines, jet blast deflectors, weapons elevators.	Fluids in accordance with MIL-H-22072 contain 30-60 percent ethylene glycol, 10-30 percent polyoxypropylene glycol, and 30-60 percent water	Hold for shore disposal. Keep separate from petroleum hydraulic fluids.
	Weapon and combat systems.	Synthetic fluids such as MIL-S-81087 and MIL-H-83282	Hold for shore disposal. Keep separate from petroleum hydraulic fluids.
<b>Insecticides, pesticides</b>	Pest control operations.	Diazinon, Baygon, Dyrethrin, Resmethrin, Dursban, Malathion.	Containerize for shore disposal.
<b>Lubricants, dry-film</b>	Machine maintenance, motors, roller bearings	Dry lube, molybdenum disulfide, graphite, talc	Containerize for shore disposal.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Medical/dental lab chemicals and materials</b>	Dental amalgam used as filling material, thermometers, mercury from broken thermometers  Antiseptics, disinfectants	Silver, silver nitrate, mercuric nitrate, mercury  Isopropyl alcohol	Containerize for shore disposal.  Overboard discharge permitted beyond 12 nm of shore. In port, containerize for shore disposal.
<b>X-Ray film processing wastes</b>	X-Ray film processing	X-ray film processing chemicals	Containerize for shore disposal.
<b>Oils</b>			
<b>Waste oils</b>	Non-PBC containing capacitors, coils  Cutting fluids  Damping fluids	Mineral, silicone, paraffin-based oils  Chlorinated and sulferized minerals oils, MIL-C-47220  Silicone-based oils, dimethylpoly-siloxane	Containerize for shore disposal  Containerize for shore disposal  Containerize for shore disposal
<b>Oily sludge</b>	Lubricating oils from machinery, turbines, engines, and motors  Residue from oil/water separators, fuel tanks, degreasing operations	Lubricating oils such as MIL-L-9000, MIL-L-15019, MIL-L-17331, and MIL-L-23699  Oil mixed with lead, zinc, chromium, copper, tin residues	Containerize for shore disposal  Containerize for shore disposal
<b>Oily solid waste</b>	Contaminated sorbents/rags, oil and fuel filters.	Items contaminated with residual oil	Containerize for shore disposal.
<b>Paint wastes from painting, resurfacing operations</b>	Paints, enamels, varnishes, lacquers, paint chips and debris.	Unusable paint. Paint contaminated solvents, strippers, application and clean-up materials.	Containerize for shore disposal.
<b>Personal Items</b>			
<b>Disposable butane lighter</b>	Lighters no longer usable.	Butane, plastics	Containerize for shore disposal.

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

<b>Shipboard Hazardous Material Type</b>	<b>Examples of Generation Sources</b>	<b>Examples of Associated Hazardous Materials</b>	<b>Authorized Disposal Methods</b>
<b>Polychlorinated biphenyl (PCB) contaminated components</b>	Capacitors, coils (usually with radar systems) (a listing of components containing PCBs has been provided to each ship), electrical cables, felt gaskets.	PCBs	Containerize for shore disposal.
<b>Propellants</b>	Torpedo overhaul.	OTTO Fuel II, substituted hydrazine.	Containerize for shore disposal.
<b>Solvents</b>			
<b>Chlorinated solvents</b>	Cleaning operations.	Perchloroethylene, trichloroethylene, trichloromethane, trichloroethane, freon™.	Containerize for shore disposal. Keep separate from chlorinated solvents.
<b>Non-chlorinated solvents</b>	Cleaning operations.	Ethyl acetate, acetone, morpholine, methyl ethyl ketone, toluene, xylene, kerosene, petroleum naphtha, petroleum ether, petroleum distillates.	Containerize for shore disposal. Keep separate from chlorinated solvents.
		Ethylene and propylene glycols. Methyl, ethyl, isopropyl and butyl alcohols.	Overboard discharge permitted beyond 12 nm of shore. In port, containerize for offload.
<b>Vitreous fibers, materials containing man-made fibers</b>	Thermal insulation, pipe lagging.	Man-made vitreous fibers (MMVF).	Dispose in accordance with requirements set forth in OPNAVINST 5100.19C chapter B1
<b>Water, waste</b>			
<b>Water with corrosion Inhibitors</b>	Diesel generator cooling water, diesel engine cooling water, electronic cooling water, closed loop cooling water, locked-in ballast, fuel ballast.	MIL-A-46153, Paxcool, Catcool (ethylene glycol based antifreezes).	Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal
		MIL-A-53009 (sodium metaborate, potassium silicate, mercaptobenzothiazole)	Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
<b>Water, waste (continued)</b>  <b>Water with corrosion Inhibitors (continued)</b>	<p>Diesel generator cooling water, diesel engine cooling water, electronic cooling water, closed loop cooling water, locked-in ballast, fuel ballast. (continued)</p> <p>Residue from diesel engine coolant testing</p> <p>Detergent flush of engine cooling systems</p> <p>Acid cleaning of engine cooling systems</p>	<p>Nalcool 2000, Nalfleet 9-111</p> <p>Soluble Oil</p> <p>Chloride test residues; copper sulfate mixed with MIL-A-46153 antifreeze or MIL-A-53009 or Nalcool 2000 or a combination treatment</p> <p>Sodium chromate solution mixed with residual fuel or soluble oil.</p> <p>MIL-D-16791 detergent</p> <p>Diammonium citrate, DETU, MIL-D-16791 detergent</p>	<p>Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal</p> <p>Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal</p> <p>Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal</p> <p>Overboard discharge permitted beyond 50 nm of shore. Within 50 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal.</p> <p>Overboard discharge permitted beyond 12 nm of shore. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal</p> <p>Beyond 12 nm of shore, overboard discharge permitted after neutralizing with sodium bicarbonate. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal</p>

\* Contact local public works center/public works department for authorized procedures.

\*\* Except when a State has a no-discharge zone applicable to this discharge.

Shipboard Hazardous Material Type	Examples of Generation Sources	Examples of Associated Hazardous Materials	Authorized Disposal Methods
Water, waste (continued)			
Water with corrosion Inhibitors (continued)	Acid cleaning of IF diesel engine cooler cores	Sulfamic acid, MIL-D-16791 detergent	Beyond 12 nm of shore, overboard discharge permitted after neutralizing with sodium bicarbonate. In port and within 12 nm, containerize for shore disposal. Containerize excess stock chemicals for shore disposal
Aircraft engine washdown wastewater	Water solutions with detergents, solvents, marine salts, and engine corrosion products.	Glycols, triethanolamine, naptha, 2-butoxyethanol, cadmium, chromium.	Overboard discharge permitted beyond 12 nm of shore. Inside 12 nm and in port, collect and containerize for shore disposal.

\* Contact local public works center/public works department for authorized procedures.  
 \*\* Except when a State has a no-discharge zone applicable to this discharge.



# Air

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- Ozone Depleting Substances (ODS) Advisories:
  - \* 95-01: Mission Critical Applications of Class I ODS
  - \* 96-01B: ODS Supply Support
  - \* 96-03: Shipboard Refrigerant Leak Repair and Record Keeping

Note: ODS Advisory 96-02 is for shoreside use only and is, therefore, not included in the *Guide to Environmental Compliance Afloat*.



**DEPARTMENT OF THE NAVY**  
**NAVAL SEA SYSTEMS COMMAND**  
**2531 JEFFERSON DAVIS HWY**  
**ARLINGTON VA 22242-5160**

IN REPLY REFER TO

5090  
OPR 03V24  
Ser 03V2/199  
2 OCT 1995

From: Commander, Naval Sea Systems Command  
To: Distribution

Subj: NAVY ODS ADVISORY SYSTEM - ADVISORY 95-01

Ref: (a) CNO letter 5090 Ser 451I/5U597616 dated 17 MAY 95

Encl: (1) Navy ODS Advisory 95-01 Subj: Mission Critical  
Applications of Class I Ozone-Depleting Substances

1. The purpose of this correspondence is to forward the first advisory under the Navy's ODS Advisory System. Reference (a) directed NAVSEA to establish and maintain a single Navy ODS Advisory System that would provide consistent guidance to the Fleet and field activities. In addition, reference (a) defined the format of advisories and the process by which advisories would be reviewed and approved for release. These advisories are intended to address issues of broad Navy interest and not to create policy.

2. Enclosure (1) is the first advisory under this new system. This advisory has been coordinated with the appropriate Echelon II commands and approved for release by the CNO(N45) ODS Steering Committee. Recipients of this correspondence are requested to distribute enclosure (1) to appropriate offices and subordinate organizations. Recipients are further requested to update local policy documents and procedures to reflect the guidance contained in enclosure (1).

3. As the need arises to provide additional ODS-related guidance, advisories will be prepared, coordinated, and issued. Questions and comments concerning this particular advisory should be directed to the appropriate point of contact identified in section VII.D. of enclosure (1).

4. My point of contact on this issue is Mr. David Breslin, SEA 03V24, (703) 602-9025, breslin\_david@hq.navsea.navy.mil.

A handwritten signature in black ink, appearing to read "J.L. Krinsky", is positioned above the typed name.

J.L. Krinsky  
By direction

Subj: NAVY ODS ADVISORY SYSTEM - ADVISORY 95-01

Distribution:

CNO(N451I)  
COMNAVAIRSYSCOM (AIR-4.5.3, AIR 8.0Y, AIR 3.6.1.2)  
COMNAVFACENGCOM (FAC-41FM)  
COMNAVSUPSYSCOM (N4)  
COMSPAWARSYSCOM (Code 005-3, 10-11C)  
COMSC (Code N00M, CTAN 701C)  
CINCUSNAVEUR (Code N76)  
CINCLANTFLT (N4423E)  
CINCPACFLT (N4653)  
COMNAVRESFOR (Code 01E)  
COMNAVMETOCCOM (Code N513)  
COMNAVSECGRU (Code N443)  
COMNAVCOMTELCOM (Code N45)  
BUMED (Code 434)  
SOSMRC (Code 3401)  
NSWC (04E)  
NAVSURFWARCENDIV Indian Head (Code 095)  
NAVSURFWARCENDIV Crane (Code 095, PPO)  
NAVSURFWARCENDIV Port Hueneme (Code 0009)  
NAVSURFWARCENDIV CARDEROCK Bethesda (Code 3603H)  
NAVSURFWARCENDIV Dahlgren (Code C28,C2H)  
NAVSURFWARCEN ORNSTA Louisville (Code 0985)  
NAVSURFWARCEN FLTCOMBATDIRSSACT Dam Neck (Code N622)  
NAVSURFWARCEN DET Annapolis (Code 3603)  
NAVSURFWARCEN SHIPSYSENGSTA Philadelphia (Code 1651, 3632, 9213)  
NAVSURFWARCEN WHITE OAK DET Silver Spring (Code C-19)  
NAVSURFWARCEN COASTSYSSTA Panama City (Code 3610AM)  
NUWC (Code 22)  
NAVUNSEAWARCENDIV Keyport  
NAVUNSEAWARCENDIV Keyport (Code 04)  
NAVUNSEAWARCENDIV Newport  
NAVUNSEAWARCENDIV Newport (Code 52E)  
NAVORDCEN (Code N73)  
WPNSTA Charleston (Code 044)  
WPNSTA Concord (Code 09203)  
WPNSTA Earle (Code 096)  
WPNSTA Seal Beach (Code 045)  
WPNSTA Yorktown (Code 09E)  
NAVORDCEN LANTDIV Yorktown (Code 009)  
NAVORDCEN PACDIV Seal Beach (Code 009)  
NAVORDCEN PACDIV DET Fallbrook (F)  
NAVORDCEN PACDIV DET Port Hadlock (Code 6032)  
DRPM AEGIS (PMS 400F4A1)  
PEO MIW(L)  
PEO SUB(A)  
PEO TAD(D4R)  
PEO USW(L)  
All NAVSHIPYDS  
All NAVSHIPYDS (Code 106)  
NAVSHIPYD Long Beach (Code 1170)  
NAVSHIPYD PTMSH (Code 120)

All SUPSHIPS  
All SUPSHIPS (Environmental Coordinator)  
NWADIV Corona (Code CB04)  
NAVEODTECHDIV Indian Head (Code AC-4)  
NAVSEADET Portsmouth (N32)  
NAVNUTWRTRAU,Charleston (Code 045)  
AEGIS COMBAT SYSTEM CENTER, Wallops Island  
AEGIS TRAINING CENTER, Dahlgren (Code 01G)

## **I. Navy ODS Advisory 95-01**

## **II. Subj: Mission-Critical Applications of Class I Ozone-Depleting Substances**

**III. References:** (a) OPNAVINST 5090.1B Chapter 6  
(b) CNO Washington DC 041323Z AUG 95  
(c) COMNAVSEASCOM Ser 03Y2/458 dated 09 MAR 95

**IV. Cancellation:** None

**V. Applicability:** All Navy Operating Forces and all Activities and Facilities Supporting Operational Units

## **VI. Background:**

1. Certain applications of Class I Ozone-Depleting Substances (hereafter referred to as "ODSs") that have a significant impact on the Navy's combat-mission capability have been deemed to be mission-critical. The ODSs in question include halon fire suppressants and chlorofluorocarbon (CFC) refrigerants and solvents. The use of these ODSs in mission-critical applications is authorized to continue so as to not jeopardize or degrade the safety or operational requirements of the Navy. The use shall continue until such time that ODS-based equipment and systems are retired or suitable alternative substances and technologies are implemented.

2. Reference (a) provides Navy policy on mission-critical applications. To ensure that mission-critical requirements for ODSs can be met following the production cessation of ODSs, the Department of Defense (DoD) has established a DoD Reserve of ODSs that may only be accessed for mission-critical applications. Reference (b) was issued to clarify the definition of mission-critical. The purpose of this advisory is to reiterate the definitions provided in references (a) and (b) and to provide more-detailed guidance.

## **VII. Action:**

### **A. Mission-Critical Applications**

1. The following is a list of the mission-critical applications that are authorized access to the DoD ODS Reserve:

- (a) Shipboard chilled-water air-conditioning systems using CFC-11 (R-11)
- (b) Shipboard chilled-water air-conditioning systems using CFC-12 (R-12)
- (c) Shipboard chilled-water air-conditioning systems using CFC-114 (R-114)
- (d) Ships-stores refrigeration systems using CFC-12 (R-12)
- (e) Shipboard cargo-refrigeration systems using CFC-12 (R-12)
- (f) Aircraft environmental-control systems. The following is a list of Navy aircraft with mission-critical refrigerant systems:

- (1) VH-60N, R-500
- (2) VH-3D, CFC-12 (R-12)
- (3) E-2C, CFC-114 (R-114)
- (4) TH-57, CFC-12 (R-12)
- (5) T-34C, CFC-12 (R-12)
- (6) T-44, CFC-12 (R-12)
- (7) C-12, CFC-12 (R-12)
- (8) ES-3A, CFC-12 (R-12)
- (9) NAVFLIR, CFC-114 (R-114)

(10) EC-24A, CFC-12 (R-12)

(g) Equipment and systems which are identical to shipboard and aircraft mission-critical equipment used in shore-based training applications to train military personnel in the handling, operation, and maintenance of mission-critical equipment. Examples of this application include the shipboard air-conditioning and refrigeration plants that are installed at Fleet Training Centers. Shore-based training activities and facilities are not authorized to use DoD Reserve material in support of general activity and facility applications such as building air-conditioning systems or chillers.

(h) Halon 1301 used in shipboard room-flooding applications.

(i) Halon 1301 used in aircraft explosion-suppression systems.

(j) Halon 1301 used in aircraft fire-protection systems.

(k) Halon 1301 and Halon 1211 portable fire extinguishers onboard aircraft.

(l) Halon 1211 used in flight-line fire protection.

(m) Halon 1211 used in ship and shore-based crash, fire, and rescue vehicles.

(n) Halon 1211 for limited firefighter training.

(o) Halon 1211 systems onboard Landing Craft, Air Cushion (LCAC) vehicles.

(p) CFC-113 used in support of certain oxygen-system cleaning applications.

Reference (c) provides more details on these applications.

(q) CFC-113 used in gyroscope cleaning applications. Alternatives have been developed for the majority of gyroscope cleaning applications. CFC-113 users with gyroscope cleaning applications pending alternatives qualification have established local reserves of material to support the orderly transition to alternatives. *Therefore, no material to support gyroscope cleaning has been placed in the DOD ODS Reserve and access to the DOD ODS Reserve for this application is unauthorized.*

B. Non-Mission-Critical Applications

1. The following is a list of applications that are considered non-mission-critical and are not authorized access to the DoD ODS Reserve:

(a) All shore-based air-conditioning and refrigeration equipment as well as fire protection equipment and systems are considered non-mission-critical.

Reference (a) requires all activities and facilities to convert or replace Class I ODS equipment and systems by 31 DEC 2000. Waivers to this policy must be obtained from Chief of Naval Operations (N45) via the chain of command and will be considered on a case-by-case basis.

(b) Small shipboard commercial-galley equipment such as coolers, ice machines, personal-size refrigerators, and water fountains are non-mission-critical applications and shall not be serviced with ODSs from the DoD Reserve.

2. To provide further guidance, the following are examples of applications that are not mission-critical but are often mistaken as mission-critical:

(a) Environmental test chambers utilizing CFC and CFC-based refrigerants (R-502, R-13, R-503, et cetera) that are used for temperature cycling of electronics/avionics, weapon system, and ordnance components are not mission-critical applications.

(b) Air-conditioning and halon equipment and systems installed at shore facilities that maintain aircraft and ships (NADEPs, AIMDs, Shipyards, SIMAs, et cetera) are not mission-critical applications.

(c) Pier-side refrigeration containers used by shipyards for temporary storage of ships stores while a ship is undergoing repair are not mission-critical applications.

- (d) Air-conditioning and refrigeration equipment and systems for mobile/transportable shelters, containers, and vehicles are not mission-critical applications.
- (e) Air-conditioning and halon equipment and systems installed at shore-based communications and computer facilities are not mission-critical applications.

#### C. Access To The DoD ODS Reserve

1. Access by Navy components to the DoD ODS Reserve is restricted by the Chief of Naval Operations via a list of authorized users. Authorized users are responsible for ensuring that once requisitioned, Reserve material is used only for the above listed mission-critical applications. Navy activities and facilities that serve as retail stock points and provide material to other commands are responsible for ensuring that Reserve material is issued only to authorized users. Authorized users cannot, under any circumstance, divert material ordered from the Reserve to non-mission-critical ODS applications.

#### D. Points Of Contact

1. CNO
  - (a) Ms. Catharine Cyr, CNO N4511, (703) 603-5335, DSN 322-5335, facsimile (703) 602-2676, cyrc@n4.opnav.navy.mil.
2. COMNAVSEASYSKOM
  - (a) Ships and Ship Systems: Mr. David Breslin, NAVSEA 03V24, (703) 602-9025 x240, DSN 332-9025 x240, breslin\_david@hq.navsea.navy.mil
  - (b) Activities: Ms. Deborah Verderame, NAVSEA 07E2, (703) 602-4060 x351, DSN 332-4060 x351, verderame\_deborah\_h@hq.navsea.navy.mil.
3. COMNAVAIRSYSKOM
  - (a) Halons: Mr. Jim Homan, NAVAIR 4.3.5, (703) 604-3400 x8687, DSN 664, homanjm.ntrprs@navair.navy.mil
  - (b) Refrigerants: Mr. Lee Delson, NAVAIR 4.3.5, (703) 604-3499 x8674, DSN 664
  - (c) Solvents: Mr. Frank Magnifico, NAVAIR 4.3.5, (703) 604-3400 x8679, DSN 664
  - (d) General questions: Naval aviation activities with general questions on applications of ODSs should consult their Cognizant Field Activity (CFA). CFAs may consult the ODS Substitution Guide For The Organizational And Intermediate Levels Of Maintenance for recommendations or contact the NAVAIR POCs above if additional information is required.
4. COMNAVSUPSYSKOM
  - (a) Mr. Robert Law, NAVSUP 4241A, (703) 607-0312, DSN 664, robert\_law@navsup.navy.mil
5. COMNAVFACEKOM
  - (a) Mr. Felix Mestey, NAVFAC 41FM, (703) 325-8539, DSN 221, fmestey@hq.navfac.navy.mil
6. COMSC
  - (a) Mr. John Austin, MSC, (202) 685-5042, john.austin@smtpgw.msc.navy.mil.

7. For general questions on ODSs or to receive information on alternatives to ODSs, contact the Navy CFC & Halon Clearinghouse, (703) 769-1883, navyozone@aol.com

#### **E. Incorporation Of Advisory**

1. This advisory will be incorporated in the next revision of reference (a).

#### **VIII. Advisories In Effect:**

<u>Advisory</u>	<u>Subject</u>	<u>Applicability:</u>
95-01	Mission-Critical Applications of Class I Ozone-Depleting Substances	All Navy Operating Forces and Facilities Supporting Operational Units





## DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND  
2531 JEFFERSON DAVIS HWY  
ARLINGTON VA 22242-5160

IN REPLY REFER TO

5090

Ser 03L1/360

14 SEP 1998

From: Commander, Naval Sea Systems Command

Subj: NAVY ODS ADVISORY SYSTEM - ADVISORY 96-01B

Ref: (a) CNO 5090 Ser 451I/5U597616 dated 17 MAY 95

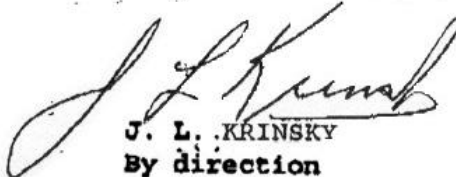
Encl: (1) Navy ODS Advisory 96-01B, Subj: Ozone-Depleting Substance  
(ODS) Supply Support

1. The purpose of this correspondence is to forward enclosure (1) under the Navy's ODS Advisory System. Reference (a) directed NAVSEA to establish and maintain a single Navy ODS Advisory System that would provide consistent guidance to the Fleet and field activities. In addition, reference (a) defined the format of advisories and the process by which advisories would be reviewed and approved for release. These advisories are intended to address issues of broad Navy interest and not to create policy.

2. Enclosure (1) has been fully coordinated with the appropriate Echelon II commands and approved for release by the CNO(N45) ODS Steering Committee. Recipients of this correspondence are requested to distribute enclosure (1) to appropriate offices and subordinate organizations. Recipients are further requested to update local policy documents and procedures to reflect the guidance contained in enclosure (1).

3. As the need arises to provide additional ODS-related guidance, advisories will be prepared, coordinated, and issued. Questions and comments concerning this particular advisory should be directed to the appropriate point of contact identified in Section VII.I. of enclosure (1).

4. My point of contact on this issue is Mr. Greg Toms, SEA 03L14, (703) 602-9025 x501, DSN-332, toms\_greg@hq.navsea.navy.mil.

  
J. L. KRINSKY  
By direction

## **I. Navy ODS Advisory 96-01B**

## **II. Subj: Ozone-Depleting Substance (ODS) Supply Support**

- III. References:**
- (a) COMNAVSUPSYSCOM Washington DC R041422Z JAN 95
  - (b) COMNAVSEASYSYSCOM Washington DC R060321Z DEC 94
  - (c) Navy ODS Advisory 96-01A, Ozone-Depleting Substance (ODS) Supply Support
  - (d) OPNAVINST 5090.1B, Change 1, Chapter 6, Management of Ozone Depleting Substances dated 02 FEB 98
  - (e) COMNAVAIRSYSCOM Washington DC R022001Z JUN 93
  - (f) CNO ltr 5090 Ser 451I/5U597647 dated 11 SEP 95

**IV. Cancellation:** This advisory cancels and replaces references (a), (b), and (c).

**V. Applicability:** All Navy Operating Forces, New Ship Construction, and All Activities and Facilities Supporting Operational Units

## **VI. Background:**

1. 40 CFR Part 82 prohibits the production of chlorofluorocarbon (CFC) refrigerants and ODS solvents (CFC-113, 1,1,1-Trichloroethane, and carbon tetrachloride) effective 1 January 1996. 40 CFR Part 82 also prohibits the production of halons effective 1 January 1994. Due to the Navy's continued dependence on these Class I Ozone-Depleting Substances (hereafter referred to as "ODSs") for mission-critical uses, the Defense Logistics Agency (DLA) has established a mission-critical reserve (hereafter referred to as the "DoD ODS Reserve") designed to support the Navy from the time of ODS production cessation to that point in time when the last mission-critical ODS-based systems are retired or suitable alternative substances and technologies are implemented. Chapter 6-5.7 of Reference (d) provides a listing of mission-critical applications for Class I ODSs.
2. Chapters 6-2.3 and 6-5.9.2 of Reference (d) place restrictions on the award and modification of contracts that require the use of ODSs. Navy Acquisition Procedure Supplement (NAPS) sections 5211.271-90 and 5252.211-9000 prohibit activities from awarding any contract that requires the use of an ODS or that can be met only through the use of an ODS unless such use has been approved by a Senior-Acquisition Official (SAO). Chapter 6-5.2 of Reference (d) requires that all Class I ODS for mission-critical applications shall be procured from the DoD ODS Reserve (per Chapter 6-5.8 of Reference (d) and not by contracting action.
3. DLA provides central management for procurement, receipt, storage, issue, turn-in, and reclamation of ODS products. The inventory control point for the DoD ODS Reserve is the Defense Supply Center Richmond (DSCR -- formerly the Defense General Supply Center (DGSC) Richmond). The co-located Defense Depot Richmond, VA (DDRV) is the primary storage site.

## **VII. Action:**

A. Table of Contents:

- A. Table of Contents
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1. ODS NSNs
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3. Authorized Users
4. Supply Point Requirements/Procedures
5. ODS Shipment Schedules
6. ODS Costs
7. Supply Automated Data Processing (ADP) Systems
8. Shipyard and SUPSHIP Requirements/Procedures
9. DSCR Assistance Hotline
- C. Shipboard Halon 1301 Support
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  3. Non-Magnetic Halon Cylinder Support
  4. Ten Pound Halon Cylinder Support
  5. Interchanging Kidde and Ansul Cylinders
  6. Wormald International Cylinders
  7. Decommissioning Units
  8. Anti-Recoil Caps
- D. Aircraft Halon 1301 Portable Fire Extinguishers
  1. Applicability
  2. Requisition and Turn-In Information
- E. ODS Supply Support For Shipboard Non-Mission Critical, Auxiliary Refrigeration Equipment and Low Pressure Air Dehydrators
  1. Authorization To Use DoD ODS Reserve Materials
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  3. Non-Mission Critical, Auxiliary Refrigeration Equipment Support
  4. Non-Mission Critical, Auxiliary Refrigeration Equipment Repair and Replacement
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  1. Technical Certification and SAO Approval
  2. SAO Approvals For Non-DoD ODS Reserve Customers
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- G. ODS Turn-In Procedures
  1. Turn-In of Excess and Recovered ODS
  2. Refrigerant and Halon Recovery Cylinders
  3. CFC-113 and 1,1,1-Trichloroethane (Methyl Chloroform) Solvents
  4. NSNs For Requisitioning ODS Recovery Cylinders
  5. Container Labeling Prior To Turn-In
  6. NSNs For Excess or Recovered ODS
  7. Handling and Shipping Procedures For Halon Cylinders and Canisters
  8. Credit For ODS/Cylinder Turn-Ins
  9. Turn-In of Empty Cylinders
  10. Shipping Procedures
  11. Shipping Address
  12. DLA Assistance
  13. Applicable Shipping Regulations
  14. Turn-In of Mixed DoD ODS Reserve Products
  15. Items Not Covered By the DoD ODS Reserve
  16. Aircraft Fixed-System Halon Bottles
  17. Procedures For European Collection Site at DDDE-Germersheim, Germany
  18. Procedures For Pacific Collection Site at FISC Pearl Harbor, Hawaii
- H. Foreign-Military Sales (FMS)
  1. DoD ODS Reserve Availability For FMS

I. Points of Contact

1. CNO
2. COMNAVSEASYS COM
3. COMNAVSUPSYSCOM
4. COMNAVAIRSYSCOM
5. COMNAVFACENGCOM
6. COMSC
7. DSCR
8. Navy Shipboard Environmental Information Clearinghouse (Navy SEIC)

J. Incorporation of Advisory

B. ODS Requisitioning Procedures For Mission-Critical ODS Applications (Except For Shipboard Halon 1301 Support):

1. ODS NSNs: ODSs (both halons and CFC-based refrigerants) are requisitioned from the DoD ODS Reserve using the National Stock Numbers (NSNs) listed in Table 1 at the end of this advisory.

2. MILSTRIP Format For ODS Requisitions: Submit requisitions to the Navy point of entry in standard 80-Column card MILSTRIP format. The following are special MILSTRIP data elements required for requisitioning:

CC 4-6	Routing Identifier: S9G
CC 51	Signal Code (Don't use "D" or "M" or your requisition will be rejected)
CC 57-59	Project Code: GDB
CC 67-69	Transaction Routing: SRG
CC 70	Leave Blank
CC 71	Condition Code: A

3. Authorized Users: To receive a shipment from the DoD ODS Reserve, the ordering activity must have prior Chief of Naval Operations (CNO) authorization. To support this process, Naval Sea Systems Command (NAVSEA), Naval Air Systems Command (NAVAIR), Military Sealift Command (MSC), and Naval Supply Systems Command (NAVSUP) have identified the Unit Identification Codes (UICs) of authorized users of each ODS. Any requirement passed to DSCR for direct issue will be screened by DSCR against the CNO-approved list of authorized users. DSCR will reject requisitions from non-approved activities with a rejection code of "D8" to advise the ordering activity that the requested material requires advanced authorization. Any activity that believes they have been inadvertently left off the list of authorized users should contact the appropriate NAVSEA, NAVAIR, or MSC point of contact listed in Section I.

4. Supply Point Requirements/Procedures: Supply points, such as Fleet Industrial Supply Centers (FISCs), are authorized to support mission-critical requirements by replenishing stocks from the DoD ODS Reserve. Supply points will ensure that the issue of stock originating from the DoD ODS Reserve is restricted to mission-critical users. To assist supply points in screening customer requisitions prior to issue from local stock, NAVSUP has updated the Technical Screening Expert System (TSES) to include the authorized UICs for each ODS. Supply points will reject requisitions from non-approved activities with a rejection code of "D8" to advise the ordering activity that the requested material requires advanced authorization (TSES point of contact is Ms Brenda Kish, NAVICP, (717) 605-1796, DSN 430-1796). Supply points

are not authorized to deviate from the TSES Table of Authorized Users. NAVSUP will update TSES UIC data whenever updated UIC lists are sent to the DLA.

- a. If an ordering activity is authorized to use the DoD ODS Reserve and the supply point does not hold ODS stocks from the DoD ODS Reserve, the supply point must tell the requisitioner to order directly from the DoD ODS Reserve using the procedures outlined in this Advisory.
  - b. If the requisitioner is not authorized to use the DoD ODS Reserve, the requisitioner must get a technical certification and SAO approval from its chain of command before the material can be purchased (See Section F for additional guidance on technical certifications and SAO approvals for non-mission-critical ODS applications).
5. ODS Shipment Schedules: Local Navy stock points may or may not keep DoD ODS Reserve material on hand. When local stock points do not hold DoD ODS Reserve material, they refer requisitions to DSCR and the material is shipped from DSCR direct to the customer. Material ordered with priority one, two, or three designation will be received by CONUS activities within 8 and by OUTCONUS activities within 13 days. Human intervention in the requisition process can sometimes improve these delivery times. Emergency CONUS deliveries have been accomplished overnight and OUTCONUS deliveries in less than a week. If you have a true emergency, call the DoD ODS Reserve Management Office at (804) 279-5203, DSN 695-5303, or the Item Manager for DoD ODS Reserve Material at (804) 279-3756, DSN 695-3756. Both are located at DSCR.
6. ODS Costs: ODS ordered from the DoD ODS Reserve is centrally funded and is free to authorized users with the exception of the 2.75 pound Halon 1301 Portable Fire Extinguisher and shipboard Halon 1301 system cylinders. The cost of DoD ODS Reserve ODS is not recouped from requisitioners. Some shipboard computer systems, however, may temporarily obligate OPTAR funds when they are used to submit requisitions for DoD ODS Reserve material. This is a false obligation...no one bills and no one pays. The false OPTAR obligations disappear during the reconciliation process, but until they do, the money is unavailable for other uses. NAVSUP has been aggressively researching and reviewing a wide variety of possible solutions to resolve the False OPTAR issue. At present, NAVSUP is pursuing the conversion of the Unit Price to \$0.01 (1 Cent) in the Change Notice files to alleviate the obligation of excessive funds. However, until further notice, to avoid the false OPTAR obligation, ships are advised to submit ODS requisitions to their POE off-line. Don't use on-board computer systems. Fill out ODS requisitions manually and submit to POE via mail, FAX, SALTS, or walk-through. If ordering direct from DSCR rather than through your normal POE, requisitions can be submitted by telephone. Call (804) 279-4865 or DSN 695-4865. DSCR will ask for all information normally placed on the requisition, so have a complete requisition on hand when you call.
7. Supply Automated Data Processing (ADP) Systems: Some activities have reported that they were charged when they ordered ODS from the DoD ODS Reserve. DLA and Navy stock points should check their ADP systems to ensure that they are not automatically inserting charges for DoD ODS Reserve material. The charges showing up do not appear to be a serious problem because they normally disappear during the reconciliation process but they do temporarily upset activity OPTARS. Any ODS requisition with a project code of "GDB" should be cost free.

8. Shipyard and SUPSHIP Requirements/Procedures:

a. Shipyards and Supervisors of Shipbuilding, Conversion, and Repair (SUPSHIPS) and other ship repair/maintenance facilities are authorized to support mission-critical shipboard air-conditioning, refrigeration, and halon equipment. To ensure all shipyard and SUPSHIP requisitions are supporting mission-critical applications, special requisition procedures will be followed. Shipyard and SUPSHIP requisitions should include the DODACC of the requisitioning activity along with the UIC of the ship or submarine where the CFC or halon will be installed. Card column 45 of the requisition will be marked with a "Y" followed by the ship or submarine UIC entered into supplementary address block (card columns 46-50). Shipyards and SUPSHIPS are not authorized to use the DoD ODS Reserve for non-mission-critical applications.

b. Shipyards and SUPSHIPS should maintain records of all mission-critical CFCs and halons requisitioned for use on government equipment whether Government Furnished Material (GFM) or non-GFM including:

- (1) The type and amount of CFC/halon requisitioned,
- (2) The UIC of the user, and
- (3) The government equipment where the CFC/halon was installed (at government facility or contractor facility).

9. DSCR Assistance Hotline: DSCR has a new assistance hotline that can be called to check stock availability or the status of requisitions. Call (804) 279-4865 or DSN 695-4865 and follow the on-line instructions.

C. Shipboard Halon 1301 Support:

1. Applicability: This section provides amplifying information for support of halon 1301 system cylinders aboard ship. This guidance does not apply to boats, craft, or LCAC, but does apply to PC-1 Class. Additionally, this guidance does not apply to old flammable liquid storage cabinets which were provided with 2-1/2 lb halon systems. These 2-1/2 lb halon systems are not required and should be removed and turned in to the DoD ODS Reserve using the procedures outlined in Section G.

2. Standard Navy Shipboard Halon 1301 Cylinders: Shipboard halon 1301 cylinders are available through the DLA. Please Note: Unlike other DoD ODS Reserve cylinders, these system cylinders are not free issue. A small monetary charge is applied to these cylinders to offset the costs of refurbishment. Turn in leaking or otherwise unsatisfactory halon 1301 cylinders to the DoD ODS Reserve and requisition cylinders using the stock numbers below. Do not use any other NSN to turn in shipboard halon 1301 cylinders. Mark all turn-ins condition Code F and turn in to the DoD ODS Reserve.

<u>Type of Halon 1301 Cylinder</u>	<u>NSN</u>
10 lb Ansul cylinder	6830-01-171-7361
10 lb Kidde-Fenwal cylinder	4210-01-073-6543
15 lb Ansul cylinder	6830-01-221-2192
15 lb Kidde-Fenwal cylinder	6830-01-284-5852
60 lb Ansul cylinder	6830-01-252-2428
60 lb Kidde-Fenwal cylinder	6830-01-294-4455
95 lb Ansul cylinder	6830-01-196-8338

95 lb Kidde-Fenwal cylinder	6830-01-302-2555
125 lb Ansul cylinder	6830-01-140-6150
125 lb Kidde-Fenwal cylinder	6830-01-275-1637

3. Non-Magnetic Halon Cylinder Support: MCM-1 and MHC-51 class ships should obtain support by open purchase. Hiller Systems Inc. is recommended as a source of support. Hiller Systems Inc. can be reached at (334) 661-1275, or at the following address:

Hiller Systems Inc.  
ATTN: Mr. Mike Devine  
3710 Lakeside Court  
Mobile, AL 36616

4. Ten Pound Halon Cylinder Support: Ten pound halon cylinders (NSN 9G 6830-01-120-5384) in FFG-8 through FFG-60 are of a non-standard type that is not currently in stock. However, support is also available from Hiller Systems Inc. (see paragraph C.3., above, for address and phone number).

5. Interchanging Kidde and Ansul Cylinders: No technical problem exists with interchanging Ansul and Kidde cylinders except that the old 1/4-inch hose may not reach the connection point. These hoses are still installed in Kidde systems on AO-177, AO-178, AO-179, and in miscellaneous spaces such as RAST and TACTAS in some CG-47 class ships. If the hose does not reach, it should be replaced with the new tubing assembly (NSN 1H 4210-01-336-9267) being installed in the Fleet now. When interchanging cylinders, it is critical that the 1/4-inch tubing or hose is disconnected from the valve. Valve actuators are not functionally interchangeable; Ansul or Wormald actuators will attach to, but will not actuate, Kidde valves.

6. Wormald International Cylinders: Note that the original Australian-built Wormald International (CAGE CZ3630) 60-lb and 95-lb cylinders in FFG-8 through FFG-60 are fully interchangeable with Ansul cylinders. FFG-8 through FFG-60 should mark original Australian 95-lb cylinders with stock number 2S 4210-LL-HAL-7175, and "F" condition, when turning them in. Original Australian-type 60-lb cylinders should be turned in using the procedures outlined in Section G.

7. Decommissioning Units: Decommissioning ships should turn in halon cylinders to DSCR as described above. All turn-ins must use the stock numbers provided in paragraph C.2. above.

8. Anti-Recoil Caps: Do not ship cylinders unless the 1-1/2 inch anti-recoil cap is installed at the halon outlet of the valve and a valve protection cap is installed over the entire valve. Anti-recoil caps are stocked under NSN 4210-01-149-3807 or NSN 4210-01-175-1924. Valve protection caps are available under stock number 2S 4210-LL-HAL-6242.

#### D. Aircraft Halon 1301 Portable Fire Extinguishers:

1. Applicability: The following requisition and turn-in information only applies to the 2.75 pound Halon 1301 Portable Fire Extinguishers (NSN 6830-00-555-8837) used on board Navy aircraft for crew compartment fire protection.

2. Requisition and Turn-In Information: The Halon 1301 Portable Fire Extinguisher assemblies (an assembly includes a cylinder with a bracket) are

available through DLA. **NOTE: Unlike other DoD ODS Reserve items, these Halon 1301 Portable Fire Extinguisher assemblies are not a free issue.** The NAVAIR supply of these assemblies is finite, therefore requisitions will be closely monitored. DLA will only fill those requisitions from activities on the NAVAIR list of Authorized Users. Aircraft Halon 1301 Portable Fire Extinguisher assemblies must be replaced 12 years from the "Date of Fabrication." The date of fabrication can be found on the cylinder date plate. See Section B for general requisition instructions. Refer to Section G for turn-in and labeling procedures.

E. ODS Supply Support For Shipboard Non-Mission Critical, Auxiliary Refrigeration Equipment and Low Pressure Air Dehydrators:

1. Authorization To Use DoD ODS Reserve Materials: Chapter 6-5.9.8 of Reference (d) authorizes all Navy ships to use material from the DoD ODS Reserve to support auxiliary refrigeration equipment (such as galley equipment, medical equipment, or water coolers) until 31 December 2002, and to support low pressure air dehydrators.

a. Material can be requisitioned from the DoD ODS Reserve using procedures outlined in Section B, above.

b. Ships where the main air conditioning and refrigeration equipment has been converted to non-ODS refrigerants will retain access to DoD ODS Reserve material for use in non-mission critical, auxiliary refrigeration equipment.

c. After 31 December 2002, any remaining material requirements for support of non-mission critical, auxiliary refrigeration equipment shall be met through local sources in accordance with Chapters 6-5.9.8 and 6-5.9.2 of Reference (d).

2. Shipboard Low Pressure Air Dehydrator Conversion Program: Shipboard low pressure air dehydrators will be converted through programs directed and managed by Commander, Naval Sea Systems Command and Commander, Military Sealift Command.

3. Non-Mission Critical, Auxiliary Refrigeration Equipment Support:

a. Type Commanders (TYCOMs) and ships shall develop and execute plans for phased retrofit/replacement of Class I ODS non-mission critical, auxiliary refrigeration equipment in accordance with Reference (d). TYCOMs and ships must consider the limited time period where ships will have access to the DoD ODS Reserve for non-mission critical, auxiliary refrigeration equipment support when executing plans.

b. Retrofits or replacements that require planning yard support shall be included in the Current Ship's Maintenance Project (CSMP). Retrofits or replacements that are within Ship's Force/IMA capability are performed as units fail or when non-rechargeable equipment requires repairs involving refrigerant replacement.

c. New procurements of non-mission critical, auxiliary refrigeration equipment must be in accordance with Reference (d). NAVSEA Catalog S6161 (Q5-CAT-010) should be used as a resource.



4. Non-Mission Critical, Auxiliary Refrigeration Equipment Repair and Replacement:

- a. If the non-mission critical, auxiliary refrigeration equipment is in satisfactory working condition, no change out is required at this time.
- b. If the non-mission critical, auxiliary refrigeration equipment is in good overall condition but in need of repair, use current procedures to repair and if required, utilize shipboard spare CFC-12 (R-12) or procure material from existing DoD ODS Reserve stockpile of R-12 as authorized by Reference (d).
- c. Some existing ice machines and ice cream machines utilize R-502 refrigerant. DSCR is in the process of making a small quantity of 44 pound R-502 cylinders available for issue. This material should be available in early FY-99. R-502 units shall be replaced with non-ODS refrigerant units when feasible.
- d. If the non-mission critical, auxiliary refrigeration equipment is beyond economical repair (cost of labor and material exceeds 50 percent of the unit's replacement value), it should be replaced with equipment using a non-ODS refrigerant, such as HFC-134a (R-134a) and HFC-404A.
- e. Retrofitting equipment with refrigerant blends other than equipment design is not authorized. Logistic support for retrofits does not exist. Because of the policy change by Reference (d) allowing the use of the DoD ODS Reserve R-12 stockpile, retrofits are not required at this time.

F. ODS Requisitioning Procedures For Non-Mission-Critical ODS Applications:

1. Technical Certification and SAO Approval: Chapter 6-5.9.2 of Reference (d) places restrictions on the purchase of ODSs with the objective of discouraging use of ODSs and preventing unnecessary acquisition of ODS products. Chapter 6-5.9.2 of Reference (d) states that no purchase of ODSs is allowed without a Technical Certification and SAO approval. All NAVAIR Technical Certifications and SAO approvals must be coordinated through the appropriate point of contact listed in Section I.

- a. The Technical Certification certifies that a technical review has been conducted and that there are no suitable substitutes available. In many cases, the Technical Certification is made at the Systems Command level (Naval Sea Systems Command, Naval Air Systems Command, Naval Facilities Engineering Command, et cetera).
- b. The SAO approval follows the Technical Certification and is provided by a Flag Officer or member of the Senior Executive Service who has been designated by the requiring command to be the SAO for the procurement. The SAO is the person who actually authorizes the purchase. When the SAO signs the approval, the SAO commits to report the procurement to ASN(RD&A) directly, through CNO, or through the appropriate Systems Command.

2. SAO Approvals For Non-DoD ODS Reserve Customers: Customers do not need technical certifications and SAO approvals to get ODS from local, non-DoD ODS

Reserve Navy Supply Point stock. Certification and approval are necessary only when a contract is required to purchase the material. When a Navy Supply Point purchases ODS for stock, it provides the Technical Certification and SAO approval. When a FISC purchases ODS for a specific customer, the customer provides the Technical Certification and SAO Approval.

3. Non-DoD ODS Reserve ODS: NAVAIR activities requisitioning an ODS not included in the DoD ODS Reserve stock must obtain a Technical Certification and SAO approval before the material can be purchased. All NAVAIR Technical Certifications and SAO approvals must be coordinated through the appropriate point of contact listed in Section I.

#### G. ODS Turn-In Procedures:

1. Turn-In of Excess and Recovered ODS: Navy field activities and operating units should have previously suspended the sale and transfer of excess and recovered halon and refrigerant to non-Navy activities in accordance with Chapter 6-5.13.1 of Reference (d). Excess and recovered ODS not required for local use in existing equipment (through local recycling programs) shall be turned in to the DoD ODS Reserve. The effectiveness of the DoD ODS Reserve is dependent on full compliance with this requirement. **NOTE: These requirements do not apply to Class I ODSs to be transferred per BRAC procedures.**

2. Refrigerant and Halon Recovery Cylinders: No authorization/pre-notification is needed when turning in ODSs to the DoD ODS Reserve. All types of cylinders or containers filled or partially filled with a DoD ODS Reserve ODS will be accepted in the DoD ODS Reserve to include fire extinguishers, drums, spheres, and canisters. Halons and refrigerants can be returned in their original cylinders or in specially-designed government-recovery cylinders. Government recovery cylinders are available free of charge from DSCR for ODS turned in to the DoD ODS Reserve. They can be requisitioned by following normal MILSTRIP procedures. The government cylinders used for recovering CFC refrigerants are painted orange, and halons red. Both have yellow tops and dual port valves (two valves) to distinguish them from the single port valve standard spec gas cylinders. For only Navy shipboard applications, dual port spec gas (virgin) CFC cylinders are available from the DoD ODS Reserve. These unique spec gas cylinders can also be used for recovering CFCs. DLA is prepared to accept all types of cylinders, including standard, system, fire extinguishers and commercial cylinders, if transferring halon or refrigerant to recovery cylinders is not practical.

3. CFC-113 and 1,1,1-Trichloroethane (Methyl Chloroform) Solvents: Chapter 6-5.9.7.1 of Reference (d) requires that unused CFC-113 and 1,1,1-Trichloroethane (Methyl Chloroform) solvents contained in their original drums or cans with unbroken seals shall be returned to the DoD ODS Reserve.\* Identify these drums and cans by the turn-in/dirty gas NSN in accordance with its storage capacity.

\* The DoD ODS Reserve will also accept CFC-113 refrigerant. If an activity has any excess CFC-113 used as a refrigerant, call (804) 279-5203 or DSN 695-5203 for specific turn-in guidance.

4. NSNs For Requisitioning ODS Recovery Cylinders: The NSNs listed in Table 2 at the end of this advisory should be used to order ODS recovery cylinders.

5. Container Labeling Prior To Turn-In: Prior to turn-in, all ODS containers should be tagged with the following information with the tag tucked beneath the cylinder protective cap or attached securely to the container:

- a. The shipper's DoD Activity Address Code (DoDAAC).\*
- b. The shipping activity with point of contact and phone number.
- c. The NSN of cylinder(s) containing the recovered ODS (see paragraph F.6. below).
- d. Type of ODS (e.g., Halon 1301 or CFC-12).
- e. The quantity of containers on the pallet or within the shipping crate. \*\*
- f. Packaged and labeled in compliance with Department of Transportation regulations

\* Note: If the turned-in material originates from a ship or submarine, the shipper should leave the DODAAC of the ship/submarine on the tag.

\*\* Note: When multiple containers (cylinders, drums, spheres, canisters, or fire extinguishers) with the same NSN are shipped palletized or in a box/crate, apply only one tag/label to the shipment, not to each item.

6. NSNs For Excess or Recovered ODS: When turning in excess or recovered halons, refrigerant, or solvents in any type of container to the DoD ODS Reserve, use the NSNs listed in Table 3 at the end of this advisory to identify the material on the tag attached to each container.

7. NSNs For Labeling Empty Spec Gas (Virgin) Product Cylinders For Turn-In To The DoD ODS Reserve: When turning in empty spec gas (virgin) product cylinders to the DoD ODS Reserve, use the NSNs listed in Table 4 at the end of this advisory to identify the cylinder on the tag attached to each container.

8. Handling and Shipping Procedures For Halon Cylinders and Canisters: Fire suppression system cylinders and canisters with electrical charges or initiators must be deactivated prior to shipment to the DoD ODS Reserve. Also, safety caps must be used to cover exposed actuating mechanisms and discharge ports on these special cylinders, otherwise dangerous safety situations could arise during the shipping, receiving, or storage process. Local fire protection equipment companies can provide safety services. Special handling procedures for halon system cylinders are outlined below. **NOTE: EPA regulations now require that halon technicians be trained in the reduction/minimization of halon emissions/releases. Therefore, only properly trained technicians should handle halon cylinders.** If further guidance is needed contact Mr. Joe Schmierer of the DoD ODS Reserve Program Office at DSN 695-5202 or (804) 279-5202.

- a. Halon 1301 is typically incorporated into built-in fire suppression systems applications with the charged halon cylinder connected to the system piping. Because the halon is over pressurized with nitrogen to facilitate distribution, these system cylinders are usually disconnected from the system and used as the transportation cylinder to return the product to the DoD ODS Reserve as the systems are taken out of service. However, fire suppression system cylinders and canisters with electrical charges or initiators must be deactivated prior to shipment to the DoD ODS Reserve. Special care should be taken when deactivating and disassembling the systems. The valves on these cylinders are designed in a manner that upon activation, they are

changed instantly from a closed position to fully open position and will dispense the Halon in under 10 seconds. The combination of these sensitive valves and the high pressure within the cylinders require compliance with good safety practices.

b. Instructions for dismantling a Halon Fire Suppression System are provided as follows:

(1) The first step is to deactivate the actuation system, which are usually electrical or pneumatic. However, disconnection from the electrical or pneumatic source is not sufficient from a safety standpoint. In the case of pneumatic systems, there is often still a small pin exposed that must be covered with a safety cap before handling. Just the slightest touch on this pin could cause full activation of the valve. In the case of electrically activated valves, simple disconnection of the electrical leads to solenoid valves is acceptable. However, if the electrical connection is to an explosive initiator, it is very important to remove the initiator. This is a very important safety practice, because static electricity can cause the explosive to detonate. These actions should be done before any other dismantling is initiated.

(2) The next step is to disconnect any discharge piping from the discharge port. Immediately upon disconnection of the piping, install an anti-recoil device (discharge port safety cap). Safety caps should be used to cover exposed actuation mechanisms and discharge ports on these special cylinders, otherwise dangerous safety situations could arise during the shipping, receiving, or storage process. Application of manufacturer's designed and supplied caps are the proper safety practice. In some cases the threads are not exactly the same as pipe threads and may not hold under the pressure of release. However, if pipe caps, plugs or plates are substituted for manufacturer's caps, at least four opposing holes must be drilled in the anti-recoil cap, plug or plate to disperse any release of the halon if the valve inadvertently activates. Anti-recoil device safety caps/plugs/plates must always be in place before handling the cylinders.

(3) Adherence with the above safety practices is paramount before removing any cylinders from the mounting position. Once the safety devices are in place, cylinders can be moved with relative safety. However, these are high-pressure compressed gas cylinders and require all the safe handling practices of any other gas cylinder. Also, protective safety wear is required for personnel deactivating cylinders.

9. Credit For ODS/Cylinder Turn-Ins: Monetary credit will not be given for turned in ODSs or cylinders. However, ownership credit will always be given to Navy for the quantity of ODSs contained in each container and for government cylinders returned to the DoD ODS Reserve. The ODSs (once reclaimed) can be requisitioned from the DoD ODS Reserve by service authorized activities and the containers can be reissued to the Navy as needed.

10. Turn-In of Empty Cylinders: Empty recovery and standard government cylinders must be turned in to the DoD ODS Reserve. Spec gas empty cylinders (see paragraphs G.2. and G.4., above) should not be used for recovery purposes (NOTE: for only Navy shipboard applications, dual port spec gas (virgin) CFC cylinders can be used for recovering CFCs). There is a particular need for 1000-pound halon and 50-pound refrigerant cylinders. If you are unsure whether the cylinder is government owned, return it anyway. Remember, once these cylinders are returned, they will remain Navy property.

11. Shipping Procedures: After tagging, activities with in-house shipping capability can ship the ODS containers directly to the address in paragraph G.12. below. No advance authorization is needed. No documentation other than the tag attached to each container is required. If an activity does not have shipping capability, it should turn the ODS in to the point where excess material is normally turned in for material turned into store (MTIS) processing. The MTIS operation will then ship it to the DoD ODS Reserve.

12. Shipping address:\*

Defense Depot Richmond VA (DDRV)  
SW0400  
Cylinder Operations  
8000 Jefferson Davis Highway  
Richmond, VA 23297-5900

\* If your activity is personally transporting ODS to the DoD ODS Reserve be sure to schedule your delivery with the DDRV Dispatch Office at DSN 695-3834 or (804) 279-3834.

13. DLA Assistance: If money is not available within your activity to ship excess ODS to the DoD ODS Reserve, transportation cost assistance can be provided for shipments costing \$250.00 or greater. This cost assistance is strictly for transporting ODS, empty recovery and standard government cylinders and not for packing costs. For transportation cost assistance fax the following data to Mr. Steve Minus at (804) 279-4970 or DSN 695-4970:

- a. Type and quantity of ODS.
- b. Total weight of shipment.
- c. The shipping cost.
- d. Requesting facility and point of contact.

14. Applicable Shipping Regulations: When shipping ODS, the following regulations should be followed as applicable.

- a. MIL-STD-129L, Military Standard for Marking for Shipment and Storage.
- b. DLAR 4145.25, Storage and Handling of Compressed Gases and Liquids in Cylinders, and of Cylinders.
- c. CFR 49, 173 (particularly 173.301), Requirements for the Shipment of Compressed Gas Cylinders.
- d. DoD Regulation 4000.25-1-M.
- e. Applicable service regulations:
  - (1) AR-700-68
  - (2) NAVSUPINST 4440.128C

(3) MCO 10330.2C

(4) AFR 67-12

15. Turn-In of Mixed DoD ODS Reserve Products: Burnt out or mixed reserve products can be turned in to the DoD ODS Reserve. Clearly identify the chemical by defining its components (i.e. R-12 & R-502).

16. Items Not Covered By the DoD ODS Reserve: The following items are not part of the DoD ODS Reserve:\*

- a. Empty regular fire extinguishers (non-system cylinders).
- b. Empty commercial containers.
- c. Aerosol cans with DoD ODS Reserve chemicals.
- d. Dry chemicals.

\* Contact your local Property Disposal Office for guidance on the discarding of these items.

17. Aircraft Fixed-System Halon Bottles:

a. Aircraft fixed-system halon bottles should not be sent to the DoD ODS Reserve. NAVAIR has directed that these specialized aircraft cylinders go to Naval Aviation Depots for halon recovery and bottle reconditioning.

b. Hydrostatic Pressure Test Requirement Policy:

(1) Reference (e) directs all user activities to stop removing halon 1301 fire extinguisher bottles from aircraft only for the purpose of satisfying the five (5) year hydrostatic pressure test requirement. Therefore, the only requirement to hydrostatically test fire extinguisher bottles is prior to refilling when five (5) years has passed since the last test.

(2) All other periodic maintenance actions on the aircraft fire extinguisher bottles shall be performed at their specified interval.

(3) Fully or partially filled bottles found during periodic inspections with (1) visible imperfections requiring the removal of the bottle or (2) suspected improper gauge operation shall be shipped to Naval Aviation Depot (NADEP) Cherry Point or NADEP North Island for halon recovery and then shipped back to the sending activity for repair.

(a) NADEP Cherry Point:

Point of Contact: Floyd Stanley (919) 466-7949

Commanding Officer  
Code 94104; ATTN: F. Stanley  
Naval Aviation Depot  
PSC Box 8021, Building 137  
Cherry Point, NC 28553-0021

(b) NADEP North Island:

Point of Contact: Ken Ramos (619) 545-2469

Department of Navy  
Naval Aviation Depot  
Customer Service, Department 930  
P.O. Box 357058  
San Diego, CA 92135-7058

(4) For additional information see Reference (e) or contact the NAVAIR Technical POC listed in Paragraph G.4, below.

18. Procedures for European Collection Site at DDDE-Germersheim, Germany:

a. The primary turn-in site for the DoD ODS Reserve is located at DDRV in Richmond, VA. However, collection sites have been established in Germersheim, Germany for European bases and in Pearl Harbor, Hawaii for Pacific region activities. These sites are not mini Reserves, only DoD ODS Reserve collection sites. The following procedures apply only to the European collection site at Defense Distribution Depot Europe (DDDE) Germersheim, Germany.

b. For the short term, only halon and refrigerant products will be accepted. If you have other eligible items, please identify and quantify, and you will be notified at a later date, when that product will be accepted

c. Deliveries to the DDDE-Germersheim collection site commenced in April 1997.

d. Turn-in procedures:

(1) All ODS containers being shipped to DDDE-Germersheim will be coordinated in advance through the Transportation Office by telephoning 378-3733/3618 or civilian 07274-58733/58618. DDDE-Germersheim will receive ODS on Monday's and Tuesday's. If units can not be turned in on these days, special accommodations will be made for turn ins.

(2) All types of ODS containers will be accepted in the DoD ODS Reserve to include cylinders, fire extinguishers, drums, spheres, and canisters. Government recovery cylinders are available free of charge through DSCR for ODS turned in. They can be requisitioned by following normal MILSTRIP procedures. The government cylinders used for recovering CFC refrigerants are painted orange, and halons red. Both have yellow tops and dual port (two valves) to distinguish them from single port valve standard spec gas (virgin) cylinders.

(3) All ODS containers being turned in to DDDE-Germersheim must have the following information attached:

- (a) The shippers DoD Activity Address Code (DoDAAC).
- (b) The shipping activity with POC and phone number.

- (c) The NSN of cylinder(s) containing the recovered ODS (see Table 3).
- (d) Type of ODS (i.e., Halon 1301 or CFC-12).
- (e) The quantity of containers on the pallet or within the shipping crate.\*

\* Note: When multiple containers (cylinders, drums, spheres, canisters, or fire extinguishers) with the same NSN are shipped palletized or in a box/crate, apply only one tag/label to the shipment, not to each item. Pallets must contain items of the same type (i.e., cylinders, drums, canisters, etc.).

(4) Fire suppression system cylinders and canisters with electrical charges or initiators must be deactivated prior to shipment to the DoD ODS Reserve. Also, safety caps must be used to cover exposed actuation mechanisms and discharge ports on these special cylinders, otherwise dangerous safety situations could arise during the shipping, receiving, or storage process. Local fire protection experts can provide safety services. Special handling procedures for halon system cylinders are provided in paragraph G.8, above. If further guidance is needed contact Mr. Joe Schmierer of the ODS Reserve Program Office in Richmond, VA at DSN 695-5202 or (804) 279-5202.

(5) Monetary credit will not be given for turned in ODS or cylinders. However, ownership credit will always be given to the service or agency for the pounds of ODS returned to the DoD ODS Reserve. ODS can be requisitioned from the DoD ODS Reserve by service-authorized activities.

(6) The following procedures are applied and will be followed:

(a) Units with leaking containers must transfer the ODS into proper storage containers before shipment to DDDE-Germersheim. If guidance is needed related to leaking cylinders, please call one of the collection site POCs as provided in paragraph G.18.d.(8), below.

(b) Cylinders will be banded to wooden pallets using metal/steel banding material or secured in a wooden crate.

(c) Halon fire extinguishers/system cylinders will have safety pins installed where applicable and secured to prevent accidental release. Safety caps will be installed on cylinders.

(d) DD Form 1348-1 will be the document used to turn-in ODS cylinders.

(e) The cargo vehicle (truck/trailer) will have means for fork lift off-loading (removable side rails etc.). Cylinders will not be off-loaded by hand.

(7) Transportation Guidance:



(a) When transporting compressed gas cylinders with ODS, the following guidelines apply to military and in some cases contracted carriers:

- Military carriers must be in compliance with USAREUR regulation 55, and USAFE regulation 75 and comply with the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and the equivalent in Germany (GGVS).
- Any shipment performed by U.S. military and military vehicles will require driver training and certification, inspection requirements of vehicles, and other requirements as mandated by regulation.
- Shipments coming from outside of Germany must be in compliance with exporting and importing country requirements.
- Shipments performed over water must be in compliance with the International Maritime Dangerous Goods Code (IMDG).

(b) For units in Germany without appropriate transportation capability, transportation services for ODS to the new collection point in DDDE-Germersheim will be made through DRMO disposal contracts commencing 1 May 1997. Units that want to utilize this service are required to provide a separate DD Form 1348-1 to fund transportation, and shall contact the servicing DRMO for instructions. DRMS will monitor shipments for regulatory compliance.

(c) If money is not available within your activity to ship excess ODS to the DoD ODS Reserve, transportation cost assistance can be provided for shipments costing \$250.00 or greater. This cost assistance is strictly for transporting ODS, empty recovery and standard government cylinders and not for packing costs. The \$250.00 minimum transportation cost assistance policy applies to shipping ODS from the overseas base to the consolidation point. Shipments from the consolidation point will be funded by the DoD ODS Reserve for transporting ODS to the United States. For transportation cost assistance fax the following data to Mr. Steve Minus at (804) 279-4970 or DSN 695-4970:

- Type and quantity of ODS
- Total weight of shipment
- The shipping cost
- Requesting facility and point of contact

(d) Turn-ins originating in Europe, except for the United Kingdom, should be forwarded to the following consolidation point:

SWE300  
Defense Distribution Depot Europe  
Bldg 7886  
US Depot Germersheim  
Gate 2  
76726 Germersheim

(8) Points of contact at DDDE-Germersheim are:

- (a) Richard Hawkins DSN: 378-3533 Comm: 07274-58-533\*
- (b) SFC Pretlow DSN: 378-3733 Comm: 07274-58-733\*
- (c) Peter Wuerschke DSN: 378-3729 Comm: 07274-58-729\*

\* After duty hours contact gate guards at 378-3678. Security guards have the home telephone numbers of the designated personnel.

19. Procedures for Pacific Collection Site at FISC Pearl Harbor, Hawaii:

a. The primary turn-in site for the DoD ODS Reserve is located at DDRV in Richmond, VA. However, collection sites have been established in Germersheim, Germany for European bases and in Pearl Harbor, Hawaii for Pacific region activities. These sites are not mini Reserves, only DoD ODS Reserve collection sites. The following procedures apply only to the Pacific collection site at FISC Pearl Harbor, Hawaii.

b. Initially the collection site will focus on accepting excess and recovered halons and refrigerants, and excess solvents in unopened original issue containers. As other items become eligible at later dates, you will be notified when those products will be accepted.

c. Deliveries to FISC Pearl Harbor collection site commenced on 1 August, 1997.

d. Turn-In Procedures:

(1) Deliveries will be accepted five days a week, Monday through Friday, between 0800 and 1400 (except holidays). Advance notification is not required on quantities of four (4) pallets or less. For quantities greater than 4 pallets, a delivery schedule should be coordinated in advance with FISC Pearl Harbor, Code 302, telephone (808) 474-3770. Any other special accommodations should be coordinated at the same phone number.

(2) All types of ODS containers will be accepted in the DoD ODS Reserve to include cylinders, fire extinguishers, drums, spheres, and canisters. The exception is aircraft specific halon canisters, which should be returned through the airframe maintenance channels. Government recovery cylinders are available free of charge through DSCR for ODS turn-ins. They can be requisitioned by following normal MILSTRIP procedures. The government cylinders used for recovering CFC refrigerants are painted orange, and Halons red.

Both have yellow tops and dual port (two valves) to distinguish them from single port valve standard spec gas (virgin) cylinders.

(3) All ODS containers being turned in to FISC Pearl Harbor must have the following information attached to each cylinder or to each palletized load:

- (a) The shippers DoD Activity Address Code (DoDAAC).
- (b) The shipping activity with POC and phone number.
- (c) The NSN of cylinder(s) containing the recovered ODS (see Table 3).
- (d) Type of ODS (i.e., Halon 1301 or CFC-12).
- (e) The quantity of containers on the pallet or within the shipping crate.\*

\* Note: When multiple containers (cylinders, drums, spheres, canisters, or fire extinguishers) with the same NSN are shipped palletized or in a box/crate, apply only one tag/label to the shipment, not to each item. Pallets must contain items of the same type (i.e., cylinders, drums, canisters, etc.). Boxed/crated loads may contain different size containers, but should contain the same type of product, and must note on the exterior that multiple NSNs are within.

(4) Fire suppression system cylinders and canisters with electrical charges or initiators must be deactivated prior to shipment to the DoD ODS Reserve. Also, safety caps must be used to cover exposed actuation mechanisms and discharge ports on these special cylinders, otherwise dangerous safety situations could arise during the shipping, receiving, or storage process. Local fire protection experts can provide safety services. Special handling procedures for Halon system cylinders are provided in paragraph G.8, above. If further guidance is needed contact Mr. Joe Schmierer of the ODS Reserve Program Office in Richmond, VA at DSN 695-5202 or (804) 279-5202.

(5) Monetary credit will not be given for turned in ODS or cylinders. However, ownership credit will always be given to the service or agency for the pounds of ODS returned to the DoD ODS Reserve. ODS can be requisitioned from the DoD ODS Reserve by service-authorized activities.

(6) The following procedures are applied and will be followed:

- (a) Units with leaking containers must transfer the ODS into proper storage containers before shipment to FISC Pearl Harbor. If guidance is needed related to leaking cylinders, please call one of the collection site POCs as provided in paragraph G.19.d.(8), below.
- (b) Cylinders will be banded to wooden pallets using metal/steel banding material or secured in a wooden crate.

(c) Halon fire extinguishers/system cylinders will have safety pins installed where applicable and secured to prevent accidental release. Safety caps will be installed on cylinders.

(d) DD Form 1348-1 will be the document used to turn-in ODS cylinders.

(e) Direct deliveries from Oahu installations must be on cargo vehicles (truck/trailer) with means for ground level forklift off-loading (removable side rails, etc.). Off-island shipments can be shipped via routine commercial or military means. Containers will not be off-loaded by hand.

(7) Transportation Guidance:

(a) When transporting compressed gas cylinders with ODS, the following guidelines apply to military and in some cases contracted carriers:

- Shipments coming from outside of Hawaii must be in compliance with exporting and importing country requirements.
- Shipments performed over water must be in compliance with the International Maritime Dangerous Goods Code (IMDG).

(b) If money is not available within your activity to ship excess ODS to the DoD ODS Reserve, transportation cost assistance can be provided for shipments costing \$250.00 or greater. This cost assistance is strictly for transporting ODS, empty recovery and standard government cylinders and not for packing costs. The \$250.00 minimum transportation cost assistance policy applies to shipping ODS from the Hawaii or Pacific base to the collection point at FISC Pearl Harbor. Shipments from the consolidation point will be funded by the DoD ODS Reserve for transporting ODS to the United States. For transportation cost assistance fax the following data to Mr. Steve Minus at (804) 279-4970 or DSN 695-4970:

- Type and quantity of ODS
- Total weight of shipment
- The shipping cost
- Requesting facility and point of contact

(c) Turn-ins originating in the Pacific region should be forwarded to the following consolidation point:

N00604  
Fleet and Industrial Supply Center  
Box 300  
Code 302 / Bldg 1762  
Pearl Harbor, Hawaii 96860-5300

(8) Points of contact at FISC Pearl Harbor are:

- |                  |                |
|------------------|----------------|
| (a) Rick Callejo | (808) 474-3770 |
| (b) Stan Sousa   | (808) 474-4076 |

H. Foreign-Military Sales (FMS):

1. DoD ODS Reserve Availability For FMS: Material in the DoD ODS Reserve is not available for FMS. The transfer of DoD ODS Reserve material to FMS customers is not authorized. Reference (f) provides further details on Navy FMS ODS support.

I. Points of Contact:

1. CNO:
  - a. LCDR Rinda Ranch, CNO N45F, commercial (703) 602-8794, DSN 332-8794, facsimile (703) 602-5364, ranch@n4.opnav.navy.mil.
2. COMNAVSEASYSYSCOM:
  - a. Greg Toms (Fleet Implementation), NAVSEA 03L14, commercial (703) 602-9025 x501, DSN 332-9025 x501, facsimile (703) 602-6808, toms\_greg@hq.navsea.navy.mil.
  - b. Doug Barylski (Shipboard Halons), NAVSEA 03G1, commercial (703) 602-5084 x216, DSN 332-5084 x216, facsimile (703) 602-5089, barylski\_doug@hq.navsea.navy.mil.
  - c. Neil Antin (CFC-113 Solvent), NAVSEA 03L21, commercial (703) 602-6832 x555, DSN 332-6832 x555, facsimile (703) 602-6808, antin\_neil@hq.navsea.navy.mil.
  - d. Lisa Johnson (Shipyards and SUPSHIPS), NAVSEA OOT, commercial (301) 743-4320, facsimile (301) 743-4180, 045b@safety.ih.navy.mil.
3. COMNAVSUPSYSCOM:
  - a. Ms. Robin Johnson, NAVSUP 4241C, commercial (717) 605-3313, DSN 430-3313, facsimile (717) 605-7658, robin\_l\_johnson@navsup.navy.mil.
4. COMNAVAIRSYSCOM:
  - a. Edith Hoschar, (Policy Support), NAVAIR 8.0Y3A2, commercial (301) 757-2139, DSN 757-2139, facsimile (301) 757-2178, hoscharea.ntrprs@navair.navy.mil.
  - b. Kimberly Gudmundson (Fleet Support), NAVAIR 3.6.3.1, commercial (301) 757-3097, DSN 757-3097, facsimile (301) 342-7737, gudmundson%am6%paxmb1@mr.nawcad.navy.mil.
  - c. Lorraine Wass (Depot Support), NAVAIR 6.3.4.2.2, commercial (301) 757-3063, DSN 757-3063, facsimile (301) 757-8451, wass\_loorraine%pax8a@mr.nawcad.navy.mil.
  - d. William Leach, (Technical Support), NAWCAD Code 43520A, commercial (732) 323-1184, facsimile (732) 323-7219, leachws@lakehurst.navy.mil.
5. COMNAVFACENGCOM:
  - a. Felix Mestey, NAVFAC HQ ENV-EQ/FM, commercial (703) 325-8539, DSN 221-8539, facsimile (703) 325-0183, mesteyf@hq.navfac.navy.mil.
6. COMSC:

- a. Joe Bohr, Military Sealift Command Code N72PC, commercial (202) 685-5771, facsimile (202) 685-5224, joseph.bohr@smtpgw.msc.navy.mil.

7. DSCR:

- a. Steve Minus, DSC Richmond, VA, commercial (804) 279-5203, sminus@dscr.dla.mil.

8. Navy Shipboard Environmental Information Clearinghouse:

- a. For general questions on ODSs or to receive information on alternatives to ODSs, contact the Navy Shipboard Environmental Information Clearinghouse, (703) 416-1132, ozone@navyseic.com, <http://www.navyseic.com>.

J. Incorporation of Advisory:

- 1. The procedures and guidance outlined in this advisory will be incorporated into future updates to NAVSUP supply procedure instructions.

# **VIII. Advisories in Effect:**

<u>Advisory</u>	<u>Subject</u>	<u>Applicability</u>
95-01	Mission-Critical Applications of Class I Ozone-Depleting Substances	All Navy Operating Forces and All Activities and Facilities Supporting Operational Units
96-01	Canceled and Superseded by 96-01A	
96-01A	Canceled and Superseded by 96-01B	
96-01B	Ozone-Depleting Substance (ODS) Supply Support	All Navy Operating Forces, New Ship Construction, and All Activities and Facilities Supporting Operational Units
96-02	Refrigerant Leak Repair and Record Keeping	All Navy Activities and Facilities Owning Or Operating Air-Conditioning and Refrigeration (AC&R) Units Greater than 50 lbs.
96-03	Shipboard Refrigerant Leak Repair and Record Keeping	All Navy Ships Operating Refrigerating Units With A Charge Greater Than 50 lbs.

**Table 1: National Stock Numbers (NSNs) For Requisitioning ODSs From the DoD ODS Reserve**

<u>Commodity</u>	<u>NSN (9G Cog)</u>	<u>Cylinder Weight or Container Size</u>
CFC-11	6830-00-079-4694	100 lbs (Drum)
	6830-00-281-3036	200 lbs (Drum)
	6830-00-899-9625	650 lbs (Drum)
CFC-12	6830-00-264-5913	45 lbs
	6830-01-443-0387	45 lbs <sup>1</sup>
	6830-00-292-0133	145 lbs
	6830-01-355-4011	1190 lbs
CFC-113	6850-01-426-4813	1-Gallon Can (Type I)
	6850-00-984-5853	5-Gallon Can (Type I)
	6850-00-983-0282	55-Gallon Drum (Type I)
CFC-114	6830-00-290-4379	57 lbs
	6830-01-443-0397	57 lbs <sup>1</sup>
	6830-00-088-3385	165 lbs <sup>2</sup>
	6830-00-782-6232	165 lbs
	6830-01-430-2857	165 lbs <sup>1</sup>
	6830-01-356-1201	1360 lbs
R-500	6830-01-357-7648	43 lbs
	6830-01-357-7646	127 lbs
R-502	6830-00-138-2482	128 lbs <sup>3</sup>
	6830-01-357-4840	44 lbs <sup>3</sup>
Halon-1211	6830-01-128-1673	5 lbs
	6830-01-283-9662	20 lbs <sup>4</sup>
	6830-00-285-5887	200 lbs
	6830-01-219-8529	1500 lbs
Halon-1301	6830-00-555-8837	2.75 lbs <sup>5</sup>
	6830-01-392-4154	137 lbs
	6830-00-543-6623	150 lbs <sup>6</sup>
	6830-01-356-9751	1240 lbs <sup>6</sup>
	6830-01-392-4999	1123 lbs
	6830-01-430-2879	1800 lbs
	6830-01-430-2885	1925 lbs

<sup>1</sup> For only Navy shipboard applications, dual port spec gas (virgin) CFC cylinders.

<sup>2</sup> 10-inch-diameter cylinder for use by ships with 10-inch cylinder racks.

<sup>3</sup> Five (5) bottle limit each.

<sup>4</sup> Not available till June 1998. Will be managed by DSCR in July 1998.

<sup>5</sup> Portable fire extinguisher with bracket. **NOTE: Not Free Issue**

<sup>6</sup> Bulk gas only. NOTE: Not for shipboard use except for charging of aircraft system cylinders. See section C for shipboard system cylinder procedures.



**Table 2: NSNs For Ordering Empty ODS Recovery Cylinders**

<u>Commodity</u>	<u>Cylinder NSN</u>	<u>Cylinder Water Weight</u>
CFC-11	8120-01-356-5960	42 lbs
	8120-01-356-9756	122 lbs
	8120-01-355-9763	1000 lbs
CFC-12	8120-01-355-4017	42 lbs
	8120-01-355-4018	122 lbs
	8120-01-355-4019	1000 lbs
CFC-114	8120-01-356-1245	42 lbs
	8120-01-356-1246	122 lbs
	8120-01-356-1247	1000 lbs
R-500	8120-01-357-6774	42 lbs
	8120-01-357-7656	122 lbs
	8120-01-357-7657	1000 lbs
R-502	8120-01-357-6770	42 lbs
	8120-01-357-6771	122 lbs
	8120-01-357-6769	1000 lbs
Halon-1202	8120-01-356-1781	122 lbs
	8120-01-447-3636	1000 lbs
Halon-1211	8120-01-356-1248	122 lbs
	8120-01-356-1249	1000 lbs
Halon-1301	8120-01-371-0533 <sup>1</sup>	117 lbs

<sup>1</sup> Denotes a high pressure cylinder of 600 PSI plus.

**Table 3: NSNs For Labeling Excess Or Recovered Halons, Refrigerants, Or Solvents In Any Type Of Cylinder Or Container To Be Turned In To The DoD ODS Reserve**

<u>Commodity</u>	<u>Container NSN</u>	<u>Cylinder Water Weight or Container Size</u>
CFC-11	6830-01-355-9754	42 lbs
	6830-01-355-9756	122 lbs
	6830-01-355-9758	1000 lbs
	6830-01-368-4847	100 lbs (Drum)
	6830-01-367-9554	200 lbs (Drum)
	6830-01-367-9555	650 lbs (Drum)
CFC-12	6830-01-355-4013	42 lbs
	6830-01-355-6648	122 lbs
	6830-01-355-4015	1000 lbs
CFC-113	6850-01-424-8532	6 Ounces
	6850-01-424-8533	1 Pint
	6850-01-424-8540	1 Quart
	6850-01-424-8531	1 Gallon
	6850-01-424-8534	5 Gallons (60 lbs)
	6850-01-424-8535	100 lbs
	8850-01-424-8536	200 lbs
	6850-01-424-8537	55 Gallons (Drum)
CFC-114	6830-01-356-1203	42 lbs
	6830-01-356-1205	122 lbs
	6830-01-356-1207	1000 lbs
R-500	6830-01-357-7650	42 lbs
	6830-01-358-5123	122 lbs
	6830-01-357-7654	1000 lbs
R-502	6830-01-357-6726	42 lbs
	6830-01-357-6727	122 lbs
	6830-01-357-6905	1000 lbs
Halon-1202	6830-01-356-1780	122 lbs
	6830-01-447-3632	1000 lbs
Halon-1211	6830-01-376-8013	1-5 lbs
	6830-01-376-8014	6-10 lbs
	6830-01-376-8015	11-20 lbs
	6830-01-376-8016	21-60 lbs
	6830-01-376-8017	61-125 lbs
	6830-01-356-1209	126-200 lbs
	6830-01-376-8018	201-340 lbs
	6830-01-356-1211	341-1500 lbs

**Table 3: NSNs For Labeling Excess Or Recovered Halons, Refrigerants, Or Solvents In Any Type Of Cylinder Or Container To Be Turned In To The DoD ODS Reserve (Continued)**

<u>Commodity</u>	<u>Container NSN</u>	<u>Cylinder Water Weight or Container Size</u>
Halon-1301	6830-01-376-8394	1-5 lbs
	6830-01-376-8395	6-10 lbs
	6830-01-376-8396	11-20 lbs
	6830-01-376-8397	21-70 lbs
	6830-01-376-8398	71-100 lbs
	6830-01-371-0501	101-117 lbs
	6830-01-376-8399	118-125 lbs
	6830-01-356-9752	126-150 lbs
	6830-01-376-8400	151-200 lbs
	6830-01-376-8401	201-260 lbs
	6830-01-376-8402	261-350 lbs
	6830-01-376-8403	351-530 lbs
	6830-01-376-8404	531-600 lbs
	6830-01-356-5958	601-1240 lbs
1,1,1-Trichloroethane (Methyl Chloroform)		
	6810-01-424-8538	6 Ounces
	6810-01-424-9662	1 Pint
	6810-01-424-9665	1 Quart
	6810-01-424-8539	1 Gallon
	6810-01-424-9674	5 Gallons
	6810-01-424-9673	55 Gallons (Drum)

**Table 4: NSNs For Labeling Empty Spec Gas (Virgin) Product Cylinders For Turn-In To The DoD ODS Reserve**

<u>Commodity</u>	<u>Cylinder NSN</u>	<u>Cylinder Fill Weight</u>
CFC-11	8120-01-355-9760	59 lbs
	8120-01-355-9761	170 lbs
	8120-01-355-9762	1400 lbs
CFC-12	8120-01-337-1816	45 lbs
	8120-01-337-6242	145 lbs
	8120-01-355-4016	1190 lbs
CFC-114	8120-01-354-9400	57 lbs
	8120-00-063-3983 <sup>1</sup>	165 lbs
	8120-01-337-6236 <sup>2</sup>	165 lbs
	8120-01-356-1244	1360 lbs
R-500	8120-01-357-6773	43 lbs
	8120-01-357-6772	127 lbs
	8120-01-357-9137	1045 lbs
R-502	8120-01-357-7655	44 lbs
	8120-01-357-6239	128 lbs
	8120-01-357-6907	1050 lbs
Halon-1202	8120-01-339-6277	160 lbs
	8120-01-371-0532	2000 lbs
Halon-1211	8120-00-337-2899	200 lbs
	8120-01-396-2165	1500 lbs
Halon-1301	8120-00-531-8193 <sup>3</sup>	137 and 150 lbs
	8120-01-356-5961 <sup>3</sup>	1123 and 1240 lbs

<sup>1</sup> 10 inch diameter cylinder (49 inch height)

<sup>2</sup> 12 inch diameter cylinder (36 inch height)

<sup>3</sup> Denotes a high pressure cylinder of 600 PSI plus.

**I. Navy ODS Advisory 96-03**

**II. Subj: Shipboard Refrigerant Leak Repair and Record Keeping**

- III. References:**
- (a) CNO WASHINGTON DC 051558Z JUN 96, Navy Policy On Regulation Of Shipboard Air Conditioning And Refrigeration Systems
  - (b) 40 CFR 82 Subpart F--National Emission Reduction and Recycling Program
  - (c) COMSC 211207Z JUN 96 Shipboard Refrigerant Leakage
  - (d) OPNAVINST 5090.1B Chapter 6 dated 14 NOV 94
  - (e) NSTM S9086-RW-STM-010 Chapter 516 Refrigeration

**IV. Cancellation:** None

**V. Applicability:** All Navy Ships Operating Refrigerating Units With A Charge Greater Than 50 lbs.

**VI. Background:**

A. Reference (a) states that air-conditioning and refrigeration (AC&R) systems designed or built to military specifications on board ships owned, operated, or bare-boat chartered by the U.S. Navy and Military Sealift Command (MSC) fall under the reference (b) exemption for military-unique systems. Therefore, these systems are not subject to the requirements of reference (b), including those requirements that are related to AC&R leakage rates.

B. Although exempted systems are not subject to the requirements of reference (b), reference (a) also states that the Navy is committed to minimizing refrigerant leakage from AC&R systems. Reference (a) sets leakage-rate performance goals of 15% for air-conditioning systems and 35% for refrigeration systems. Navy and MSC ships operating AC&R systems built to General Specifications or Military Specifications with an installed refrigerant charge of 50 pounds or more and that contain R-11, R-12, R-114, R-22, R-134a, or R-236fa shall adopt these performance goals.

C. Many AC&R systems on board ships owned, operated, or bare-boat chartered by the MSC are built to commercial specifications and therefore are subject to the requirements of reference (b). Owners and operators of systems that are not military unique should follow the guidance outlined in reference (c).

**VII. Action:**

A. In accordance with reference (a), AC&R systems built to military specifications aboard Navy and MSC ships with an installed refrigerant charge of 50 pounds or more shall adopt the following performance goals:

1. Ensure that the annualized leakage rate from shipboard chilled-water air-conditioning systems does not exceed 15% of the total installed charge.
2. Ensure that the annualized leakage rate from ship-stores and cargo refrigeration systems does not exceed 35% of the total installed charge.

B. Method By Which To Measure And Monitor Refrigerant Leakage: Attachments (1) and (2) are provided to assist ships force in complying with these requirements. These forms are provided for guidance only and may be revised or substituted to suit individual needs. The rate at which refrigerant is leaking from shipboard AC&R equipment can be estimated using the following procedure:

1. Attachment (1) is a day-to-day Service/Maintenance Report Log that can be used to document all service and maintenance conducted on AC&R systems. Attachment (1) is used to keep track of a system's refrigerant consumption. This form is also used to estimate the system's leakage rate in order to determine compliance with reference (a).
2. Identify Total Installed Charge: The total installed charge of the system may be obtained from the system technical manual, Fleet Technical Support Center representative, or the In-Service Engineering Agent.
3. Identify Maximum Allowable Annual Leakage Rate: Using paragraphs VII.A.1. and VII.A.2., determine whether the maximum allowable annual leakage rate for the system is 15% or 35%.
4. Accidental Discharges and Refrigerant Removal: Between refrigerant chargings, it is possible that refrigerant has been removed or recovered from a system or an accidental discharge or venting has occurred. These events should not be considered when estimating system leakage; and failure to record and account for refrigerant removal and accidental discharge will cause the technician to calculate higher-than-actual leakage rates. Therefore, refrigerant removal and accidental discharges should always be recorded by technicians. The amount of refrigerant removed from a system can be accurately estimated by measuring the change in weight of recovery cylinders and should always be recorded on Attachment (1). The amount of refrigerant lost through accidental discharges must be estimated by the trained technician and should always be recorded on Attachments (1) and (2).
5. Net Leakage: The net leakage of a system refers to the system's net refrigerant leakage or net refrigerant consumption. The net leakage is often calculated each time refrigerant is added to a system and covers the period of time since refrigerant was last added to the system. The net leakage can be calculated as follows: Net Leakage (lbs) Since Last Charging = (Refrigerant Added (lbs) Since Last Charging) - (Refrigerant Removed (lbs) Since Last Charging) - (Losses Due To Accidental Discharge or Venting (lbs) Since Last Charging).
6. Annualized Leakage Rate: The annualized leakage rate in terms of percent per year can be estimated by dividing the system's net refrigerant leakage (paragraph 5, above) by its installed charge (paragraph 2, above) and prorating the result over the entire year. The following formula may be used:

$$\begin{array}{lcl} \text{Annualized} & & \\ \text{Leakage} & = & \frac{\text{Net Leakage (lbs)}}{\text{Installed Charge (lbs)}} \times \frac{365 \text{ (days/yr)}}{\text{Days Since Refrigerant}} \times 100 \\ \text{Rate (\%)} & & \text{Last Added (days)} \end{array}$$

The result of this formula should be compared to the system's maximum allowable annual leakage rate (paragraph 3, above). If the system is exceeding its maximum allowable annual leakage rate, then shipboard personnel should take immediate action to repair leaks.

C. Points of Contact:

1. CNO
  - (a) Ms. Catharine Cyr, CNO N451I, (703) 602-5335, DSN 332-5335, fax (703) 602-2676, cyrc@n4.opnav.navy.mil.
2. COMNAVSEASYSKOM
  - (a) Mr. David Breslin, NAVSEA 03L14, (703) 602-9025 x240, DSN 332-9025 x240, breslin\_david@hq.navsea.navy.mil.
3. COMSC
  - (a) Mr. John Austin, MSC, (202) 685-5042, john.austin@smtpgw.msc.navy.mil.
4. For general questions on ODSs or to receive information on alternatives to ODSs, contact the Navy CFC & Halon Clearinghouse, (703) 769-1883, navyozone@aol.com, <http://home.navisoft.com/navyozone>.

D. Incorporation of Advisory:

1. This advisory will be incorporated in the next revision of references (d) and (e).

**VIII. Advisories In Effect:**

<u>Advisory</u>	<u>Subject</u>	<u>Applicability:</u>
95-01	Mission-Critical Applications of Class I Ozone-Depleting Substances	All Navy Operating Forces and All Activities and Facilities Supporting Operational Units
96-01	Ozone-Depleting Substance (ODS) Supply Support	Canceled and Superseded by 96-01A
96-01A	Ozone-Depleting Substance (ODS) Supply Support	All Navy Operating Forces, New Ship Construction, and All Activities and Facilities Supporting Operational Units
96-02	Refrigerant Leak Repair and Record Keeping	All Navy Activities and Facilities Owning Or Operating Air-Conditioning and Refrigeration (AC&R) Units Greater than 50 lbs
96-03	Shipboard Refrigerant Leak Repair and Record Keeping	All Navy Ships Operating Refrigerating Units With A Charge Greater Than 50 lbs

## Service/Maintenance Report Log

Appliance/Unit Number \_\_\_\_\_ Total Installed Charge \_\_\_\_\_ Maximum Allowable Annual Leakage Rate <sup>1</sup> \_\_\_\_\_

Date	Service / Maintenance Action	Technician	Refrigerant Added (lbs)	Refrigerant Removed (lbs)	Loss Due To <sup>2</sup> Accidental Venting (lbs)	Net Leakage <sup>3</sup> (lbs)	Annualized Leakage Rate <sup>4</sup> (%)	Leak Repaired (Yes/No/NA)	Comments

**Notes:**

- Maximum Annual Leakage = 35% (Refrigeration) or 15% (Air Conditioning).
- Each time an accidental or unintentional release occurs, the technician must document the release on an accidental/unintentional release form (Attachment (2)).
- Net Leakage (lbs) Since Last Charging = Refrigerant Added (lbs) Since Last Charging - Refrigerant Removed (lbs) Since Last Charging - Loss Due to Accidental or Unintentional Venting (lbs) Since Last Charging.
- Annualized Leakage Rate = (Net Leakage / Installed Charge) x (365 / Number of Days Since Refrigerant Last Added) x 100

Maintain For Record Purposes For 3 Years

**Attachment (1)**



## Accidental or Unintentional Venting Report

Date \_\_\_\_\_

Location \_\_\_\_\_

Refrigeration Unit \_\_\_\_\_

Type of Refrigerant Vented \_\_\_\_\_ Approx. How Many Pounds Were Vented \_\_\_\_\_

Description of Accidental Venting Incident \_\_\_\_\_

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What Was the Cause of the Release? \_\_\_\_\_

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What Precautions Have Been Taken To Prevent This From Happening Again? \_\_\_\_\_

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Technician Name/Rank or Grade \_\_\_\_\_ Certification Number \_\_\_\_\_

Engineering Officer Signature \_\_\_\_\_ Date \_\_\_\_\_

Engineering Officer Printed Name and Rank \_\_\_\_\_

**Maintain For Record Purposes For 3 Years**

**Attachment (2)**

# Hazardous Material

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- OPNAVINST 5100.19C, Change 2, Chapter 23: Hazardous Material Control and Management Standards
  - \* Appendix C23-A: Hazardous Material/Hazardous Waste Containers
  - \* Appendix C23-B: Navy Used Hazardous Material Identification Label
  - \* Appendix C23-C: Hazardous Material Compatibility Storage Diagram
  - \* Appendix C23-D: HMIS Coding and Storage Requirements
  - \* Appendix C23-E: PCB Labels
- OPNAVINST 5100.19C, Change 2, Chapter B3: Hazardous Material Control and Management
  - \* Appendix B3-A: Hazardous Material Spill Response Procedures (Surface Ships Only)
  - \* Appendix B3-B: Mercury Spill Response and Cleanup Procedures (Surface Ships Only)
- OPNAVINST 5100.19C, Change 2, Chapter D15: Submarine Hazardous Material Control and Management
- COMNAVSUPSYSCOM MECH PA 050809 MAR 97 (Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) and Hazardous Inventory Control System (HICS) Information Bulletin)
- CNO WASH DC//N45 081640Z DEC 98 (Hazardous Material (HM) Offload Standardization)
- COMNAVSEA WASH DC 060340Z APR 99 (NAVSEA-Approved NESHAP-Compliant Coatings)

## CHAPTER C23

### HAZARDOUS MATERIAL CONTROL AND MANAGEMENT STANDARDS

#### C2301. DISCUSSION

a. Hazardous material control and management (HMC&M) standards address the storage, use, and disposal of all hazardous material (HM). The information in this chapter provides the detailed guidance that ships need to properly manage and control HM. It implements the considerations contained Chapter B3.

b. Special precautions are required for the stowage, handling, and use of HM aboard ship. Significant hazards include fire, poisoning by breathing toxic substances in unventilated spaces, dermatitis, asphyxiation, and burns of the skin and eyes. This chapter contains specific management guidance and precautions for stowage and use of all HM, precautions for subcategories of HM (flammable materials, toxic materials, corrosive materials, oxidizers, aerosol containers, and compressed gases), and specific precautions for certain selected materials. Chapter B3 describes HM emergency response and training requirements.

#### C2302. GENERAL HMC&M STANDARDS

##### a. HM Requisitioning

(1) Before ordering any HM, ships shall determine that a valid requirement exists. The Ships Hazardous Material List (SHML) provides the requirements for shipboard HM. Ships shall order only material allowed by this document, unless otherwise specifically authorized by the commanding officer (or other designated officer O-5 and above).

(2) If a HM minimization center (HAZMINCEN) is in operation, this center shall requisition all HM (including HM storage containers).

b. SHML. The SHML is a record of the HM authorized aboard U.S. Navy surface ships. The SHML provides surface ships with the ability to determine HM authorized and preclude stocking of dangerous material for which the ship has no use. For ease of use, the SHML is provided quarterly on the DoD's CD-ROM, *Hazardous Material Control & Management/Hazardous Material Information System (HMC&M/HMIS)*. The SHML can be searched using FSC, NIIN, nomenclature, or part number. Each SHML item is marked with a HM use category in the Allowed Onboard data field. The Naval Supply Systems Command working with the technical systems commands assigns these use categories based on a technical and safety and health assessment of the product. These use categories are:

(1) **Allowed (A)**. No restriction on use of this HM on surface ships.

(2) **Prohibited (P)**. HM not allowed aboard surface ships and cannot be requisitioned.

(3) **Restricted (R).** HM not allowed aboard surface ships except with specific restrictions.

(4) **Obsolete (O).** HM that is obsolete and in most cases no longer procurable.

(5) **Not Identified (N).** HM that is either not identified or not found in the SHML. This HM shall not be issued or used unless/until it is validated as necessary and action is taken to add it to the SHML.

Equipment and tasking vary among ships within a single type and configurations of individual ships may vary over time. If a ship has identified a valid requirement for an HM, and that material is either not listed in the SHML or is listed with a P or N, personnel shall complete a SHML Feedback Report (SFR). They shall submit this report via Streamlined Automated Logistics Transmission System (SALTS) to the Naval Inventory Control Point (NAVICP) Code 0541, copy to the appropriate type commander and procurement department. NAVICP shall provide a response within 48 hours of submission. If SALTS is unavailable, use manual form NAVSUP 1400 - 10/97.

**NOTE:**

The fact that a HM is listed in the SHML does not in itself prove a "valid need" for a given ship to have that item aboard. No ship will have a valid need for all items in the SHML. Each ship must assess its own needs, using the SHML as a guide.

c. **HM Open Purchase.** Navy policy is that, to the maximum extent feasible, ships shall only procure and use standard stock HM.

(1) In **the exceptional case** for which the stock-numbered product can be clearly demonstrated to be inferior, or due to the urgency of need cannot be satisfied from supply system stock, commanding officers may justify and authorize open market purchases of HM for those items. The SFR, when completed and signed by the commanding officer (or a designated officer O-5 or above) and attached to the purchase request, shall be used as the required certification. The ship shall obtain an MSDS from the manufacturer or supplier prior to approval of a new product for purchase or use and retain the MSDS aboard. A copy of the MSDS and the SFR shall be submitted via SALTS to NAVICP Code 0541, copy to the appropriate type commander and procurement department with a copy of the MSDS attached. If not already available on HMIS, a copy of the MSDS shall also be submitted to NAVENVIRHLTHCEN.

(2) If ships or other commands are approached by commercial vendors offering HM not listed in the SHML for shipboard use or for substitution for stock-numbered HM, they shall refer vendors to NAVICP, Code 0541, DSN 430-6990, FAX 430-1615, commercial (717) 790-6990, FAX (717) 790-1615.

d. **HM Receipt**

(1) The supply department shall check all containers of HM obtained through open purchase upon receipt to ensure that they contain a manufacturer's label as described in paragraph C2302e. They shall refuse a container not so marked.

(2) When HM containers are accepted and brought aboard, they shall be immediately placed in an appropriate stowage location based on the hazard associated with the product.

(3) If a HAZMINCEN is in operation, the HAZMINCEN shall be the receiving point for HM deliveries. This will allow HM data to be entered into the HICS software.

e. **Container Marking**

(1) Manufacturer's labels for shipboard identification of HM containers must clearly identify the material name, the manufacturer's name and address, and the nature of the hazard presented by the HM including the target organ affected by the material. A manufacturer's label may be a tag, sign, placard, or gummed sticker. When HM is dispensed from the shipping container to another container, the person dispensing the HM shall annotate the receiving container to indicate the material name, manufacturer name and address, and the nature of the hazard (including target organ) as specified by the manufacturer to preserve the continuity of information. To mark unlabeled containers, tanks, or containers where the label has been destroyed or damaged, ships may use the Department of Defense (DoD) Hazardous Chemical Warning Label. HMIS provides this label and label information at the end of each MSDS. Personnel can print the label on plain paper or the pre-printed color forms: DD 2521 (8.5"x11") (S/N 0102-LF-012-0800) or DD 2522 (4"x7") (S/N 0102-LF-012-1100).

**NOTE:**

If the material is transferred into a small container, such as a dropper bottle for boiler water chemistry, and insufficient room exists to place the required information on the label, the label shall contain the material name, manufacture's name, and stock number at a minimum. The ship shall provide the remaining information on a card in a location known to users, that is in close proximity to the container, so that it can be readily referenced. In addition, supplemental label information shall be keyed, using numbers or letters, to the smaller containers.

f. **HM Issue**. Only limited quantities of HM essential for immediate needs during a work shift shall be issued from flammable liquid storerooms or other issue rooms. Generally, less than a 5-days supply of each routinely used item shall be in or near the user compartment.

g. **Collection And Offload Of Used Or Excess Hazardous Material**

(1) Control of shipboard used or excess HM is an important element in the Navy's comprehensive HM management effort. Ship's force shall carefully

follow the practices delineated for shipboard HM disposal and off-loading to minimize workload and allow full compliance with applicable regulations. Supervisors must emphasize to all hands that they must control and offload rags, protective clothing, empty containers, and items used in spill response contaminated by hazardous substances with the same precautions as applied to all other HM. The ship will transfer most used or excess HM to a shore activity for processing; however, some may be disposed of overboard at sea. Appendix L of reference C23-1 provides guidance on which HM must be transferred ashore and which may be disposed of at sea. The requirements detailed below shall not preclude the overboard discharge of HM during an emergency where failure to discharge would clearly endanger the health or safety of shipboard personnel or would risk severe damage to the ship.

(2) Ships shall exhaust all beneficial uses from a HM prior to transfer or disposal. This action includes increasing the useful life of the material by extending the shelf life per approved procedures outlined in references C23-2 and C23-3 or redistribution within the ship for reutilization.

(3) **Collection of Used HM.** Appendix L of reference C23-1 and Maintenance Requirement Cards (MRCs), as applicable, provide guidance for determining which types of used HM must be collected and held for treatment by shore disposal facilities.

(a) Ships shall **segregate** collected used HM. They shall normally fill a container with one type of HM, i.e., all the used HM in a container shall normally be of only one stock number. They shall either place used HM in the container for the original material or in an impervious container specified in appendix C23-A. The container shall be securely sealed using the installed or provided closure devices to ensure the container does not leak during transportation. The container shall be properly labeled (refer to paragraph C2302f for labeling requirements) to indicate content, and stowed in appropriate locations following the stowage precautions in this chapter for comparable HM.

(b) If the contents of a HM container are unknown, the label must state so, and fleet accounts must pay the costs of chemical analysis to determine specific content. The workcenter originating the HM for offload shall provide any useful information in identifying the origin or composition of the material in the container. If the contents are unknown and the originating workcenter can determine by experience that the material is flammable or combustible (the most common type of HM aboard ship), reactive, toxic, or corrosive, they shall supply that information on the container to allow proper stowage aboard ship and at the receiving shore activity.

(c) Specific procedures for oil pollution abatement, including requirements for segregation of oily wastes, used oil, and waste oil are found in Naval Ships Technical Manual, Chapter 593, "Pollution Control." Ships equipped with oily waste holding tanks shall direct all shipboard oily waste to the oily waste holding tanks. They shall collect used lube oils separately and store and label for eventual shore recycling. They shall also collect synthetic lube oils and hydraulic oils separately from other used/waste oils.

Ships that do not have a system dedicated to the collection of used synthetic oils shall use epoxy-lined steel containers, properly labeled, for eventual shore recycling.

(4) **Procedures for Off-Loading Used or Excess HM to a Naval Shore Activity.** The HM supervisor shall receive and consolidate (as appropriate) all used HM for offload. The HM supervisor shall turn over used or excess HM to the shore facility Hazardous Material Offload Team (HOT), normally the local fleet and industrial supply center (FISC). Ships that have a HAZMINCEN aboard shall use the HAZMINCEN as the collection point for used HM.

(a) **Processing Used HM**

1. The HAZMINCEN (or workcenter generating used HM for ships not having a HAZMINCEN) shall ensure that HM is properly packaged in the original container or in a container specified for the material in appendix C23-A. If any questions exist regarding the integrity of the original container (e.g., badly rusted, badly dented, or poorly sealed), the contents shall either be transferred to a new container or the HAZMINCEN shall place the damaged container into an "overpack" container (a steel drum with removable cover (see appendix C23-A)). The overpack container shall be filled with sorbent material to absorb possible leaks and prevent movement of the original container within the overpack container. If the material is not in its original container, the HAZMINCEN (work center) shall ensure that the material is labeled per paragraph C2302e. In addition, a label identifying the material as used HM (see appendix C23-B) shall be completed and attached to the container. This label shall contain information on the process in which the material was used (e.g., used spring bearing lube oil, circuit board cleaning solvent, dried out epoxy paint, etc.). It will also identify any known impurities that the material might contain based on routine analysis that may be conducted for PMS (e.g., Naval Oil Analysis Program (NOAP) test results) and any special storage requirements. This information is necessary to assist the shore activity in properly storing the used HM and filling out disposal documents if the material is processed as waste.

**NOTE:**

Label or mark overpack containers regarding orientation to prevent spills if the container were improperly stored or transported.

2. The HM supervisor shall ensure that a DD 1348-1 is prepared for each container of used HM. The following information shall be clearly identified (where known) on the DD 1348-1: the NSN, the material name, and the manufacturer's name and address. The individual filling out the DD 1348-1 shall properly label the container with information required by paragraph C2302e and with the Used Hazardous Material label specified above.

(b) **Transferring Used HM Ashore**

1. The ship's point of contact shall contact the shore activity HOT point of contact to request a pick-up and ascertain local requirements (these requirements may be obtained from shore activity

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instructions, senior officer present afloat or ashore (SOPA) regulations, the Fleet Guide, or the response to the logistics request (LOGREQ)). For used HM which can be identified by a stock number and manufacturer and for which a MSDS is available in the HMIS, no MSDS need be provided to the receiving Navy activity (one will probably be required if transferring to a non-Navy activity or overseas). Used HM for which a MSDS does not exist in the HMIS or which has been open purchased shall be accompanied by a hard copy of the MSDS. In situations where compatible materials are inadvertently mixed, the ship shall include the MSDSs of each material in the mixture with the used HM. If the contents are unknown, the ship need not include a MSDS. However, they shall supply information, such as whether the material is flammable or combustible (the most common type of HM aboard ship), reactive, toxic, or corrosive, in the "Special Stowage Requirements" item of the Used HM label to allow proper stowage at the receiving shore activity.

2. Navy shore activities shall only require that ships provide used HM that is properly packaged in the original container or in a container specified for the material in appendix C23-A. The container shall be properly secured and properly labeled with a properly filled out DD 1348-1 and a MSDS, if the material originated outside the supply system or a MSDS is unavailable in the HMIS. Non-compliant material shall be returned to the originating ship. Receiving shore activities shall report problems experienced with material received from a ship to the command and, if flagrant or repeated, to the ship's immediate superior in command (ISIC). If any additional requirements (e.g., waste profile sheets) are placed on the shore activity by Federal or State laws and regulations or by the supporting Defense Reutilization and Marketing Office (DRMO), the receiving shore activity shall ensure that these requirements are met using information supplied by the ship on the DD 1348-1 and container label. When required, the shore activity shall charge analysis of unknown material to fleet accounts.

(c) **Excess HM.** A workcenter shall turn in full, properly sealed containers of usable HM in excess of its needs to the HAZMINCEN (or supply department if a HAZMINCEN is not installed). HAZMINCEN personnel shall determine if this material may be used elsewhere in the ship or if it exceeds the ship's needs. If the material exceeds the ship's needs, the ship shall transfer it to the supporting FISC with a properly completed DD 1348-1 for each NSN of material being transferred.

#### **C2303. HAZARDOUS MATERIAL MINIMIZATION CENTER**

a. **General.** If established, the HAZMINCEN shall store and centrally control the issue and collection of HM for the ship.

b. **Functions.** The HAZMINCEN shall perform the following functions:

(1) Store HM in containers or compartments reserved and configured exclusively for HM. Bulk and infrequently used HM shall be stored in compliant storage spaces and only moved to the HAZMINCEN when necessary for replenishment and use.

(2) Make HM available to workcenters 24 hours a day.



(3) Record and control HM using the Navy-developed HICS software in a manner that permits auditing of both the store inventory and the user.

(4) Restrict the amount of HM in use to the lowest level necessary for the work performance of ship workcenters. Workcenters may be allowed to retain a 5-day quantity of HM used daily in suitable lockers.

(5) Provide optimal procedures and facilities for the turn-in of used HM, empty HM containers, and HM-contaminated items.

(6) Consolidate previously issued unused HM for either reuse or categorizing for alternate use.

(7) Properly process HM for safe offload ashore (at sea disposal may be accomplished when allowed by appendix L of reference C23-1).

(8) Coordinate procurement and receipt of HM authorized aboard.

c. **Facility.** The ship shall identify suitable space for use as the HAZMINCEN. This space shall have suitable protection in the event of a fire or spill of HM (see C2304 for HM storage precautions). The ship shall have appropriate personal protective equipment, adequate ventilation, sufficient shelving, and containment to safely store, segregate, and issue the various types of common-use HM used aboard. The space shall be sufficiently large and equipped to permit issuance of HM and consolidation of either used or unused HM, empty HM containers, and HM-contaminated items. The ship shall install a computer and peripherals needed to run the HICS software in the HAZMINCEN's administrative office and not in the HM storage area. NAVSEASYS COM has identified spaces for use as HAZMINCENs and administrative offices for most ship classes. This includes interim spaces with minor modifications to ensure proper safety and health and final spaces to be converted by SHIPALT.

d. **Manning.** Ships shall assign sufficient personnel to the HAZMINCEN to accomplish the functions listed in paragraph C2303b. Ships should use the HAZMAT Work Center listed in their Activity Manpower Document (AMD) as guidance for HAZMINCEN manning. If the ship's AMD does not list a HAZMAT Work Center, HAZMINCEN manning guidance should be obtained from the type commander. The supply department shall train all personnel assigned to the HAZMINCEN on their duties and responsibilities prior to assignment.

e. **Operation.** Reutilization and inventory management is a proven afloat methodology that establishes central control and management of ship's HM. It relies on a controlled HM issue/reuse site (HAZMINCEN) with HM inventory tracking by HICS. This concept has worked successfully on both large and small surface ships. The following guidance is based upon installations of shipboard HAZMINCENs:

(1) **Startup.** The HAZMINCEN should reduce on board quantities of HM through inventory control and management. After a suitable HAZMINCEN facility(ies) is identified and prior to commencing operations, the ship must plan to systematically and incrementally assume management and inventory

control of workcenter HM stocks throughout the ship. This shall be accomplished by:

(a) Workcenter personnel in conjunction with HAZMINCEN personnel identifying and moving HM to the HAZMINCEN facility(ies). A maximum of 5-days use of HM may be entered into the HICS and reissued to the workcenter.

(b) Storing in compliant storerooms all HM beyond the capacity of the HAZMINCEN issue room.

(c) Moving ashore all ship's excess HM for redistribution or disposal per the procedures of C2302g.

Experience has shown that sufficient material should be available on board after these efforts to conduct HAZMINCEN operations and perform the preventive, corrective, and facilities maintenance needed to support ship operations.

During startup, it is highly likely that a large portion of the volume collected will be unusable due to material deterioration or expired shelf life, which cannot be extended. This material shall be transferred to the supporting shore activity for reuse or disposal. The initial collection of HM may include material not on the SHML. Retention of this material on board shall have to be justified or the material transferred ashore. If the material is required aboard, the SHML modification shall be requested per paragraph C2302b.

HAZMINCEN operators shall enter HM nomenclature, NSN, manufacturer's part number, unit of issue, stowage location, and other pertinent information into HICS to initialize the inventory control system.

After the HAZMINCEN is in operation, the safety officer, HM coordinator, and master-at-arms force can initiate periodic surveys of ship spaces to account for all stores of HM so that it may be entered into HICS. A 5-day's supply of HM may remain under the control and management of the workcenter(s) provided adequate stowage (e.g., flammable liquid storage cabinets) is available.

## (2) Operation

(a) Hours of operation. The HAZMINCEN shall provide 24 hours of service to workcenter customers. The ship can accomplish this by establishing normal hours of store operation during ship's working hours and on-call service during other periods. The number of hours that the store should remain open will be dictated by experience, but shall be sufficient to support ship's maintenance and allow personnel to return unused HM, used HM, and HM-contaminated items during and at the end of the normal work day. Guidance on HAZMINCEN hours of operations may be available from type commanders based on experience on other ships.

(b) HM delivery. When workcenter supervisors require HM, they should provide that requirement to the HAZMINCEN. The following are request procedures that have been successful:

1. Phone-in HM request in advance for immediate pickup
2. Request turned in at the HAZMINCEN for pickup with a minimal wait
3. Request form filled out and submitted in advance of the requirement for immediate pickup the next day.

The system shall concentrate on being user-friendly, emphasizing paperwork reduction and ease of obtaining the material to do the work. The HAZMINCEN shall not require the user to submit a requisition for HM. Ships should consider paperless procedures, which require providing the necessary information verbally to the HAZMINCEN operator, but the user shall sign for the HM using a form generated by HICS.

The HAZMINCEN shall provide workcenter personnel with the amount of HM necessary to accomplish the job. If a worker needs only a pint of a solvent, only a pint should be issued; not a quart. The HAZMINCEN should, where possible, break down the volume issued using smaller containers. The HAZMINCEN shall mark these containers per paragraph C2302e prior to issue. Re-pour operations may not be an option for all HAZMINCENs due to space and safety limitations. Consult with the safety officer (or supporting industrial hygiene officer) to determine advisability of re-pour operations.

When HM is requested, the HAZMINCEN operator will consult the HICS database to determine if the HM is available. If the HM is available, an issue transaction is accomplished and the HM is issued. If the material is not available, the HAZMINCEN shall requisition it from the ship's supply department. The HAZMINCEN shall account for the HM in HICS upon receipt and issue it to the requesting workcenter. Material not on board will have to be requisitioned by the supply department using normal procedures.

Once a HAZMINCEN is in operation, the supply department shall not accept requisitions for or provide any HM directly to ship workcenters. HM shall only be requisitioned by the HAZMINCEN for distribution to the workcenters.

(c) **HAZMINCEN stock levels.** The HAZMINCEN HM stock levels will require establishment without historic use data. The HAZMINCEN shall survey workcenters to determine the amount and types of HM that they expect to use and they expect the HAZMINCEN to have on-hand. A review of Planned Maintenance System (PMS) and technical manual requirements for HM use will establish a credible basis for carrying the HM items aboard. Once usage data becomes available, the HAZMINCEN shall establish high and low (reorder point) stock levels for each HM it manages and shall strive to maintain levels above the low-level point. When the HAZMINCEN stock level of a HM reaches a reorder point, resupply is obtained from the supply department bulk stowage and is repackaged as necessary into units of issue normally required by the workcenters.

(d) **HM return.** At the completion of a maintenance action or the end of the workday, workcenters shall return unused HM and its container as

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well as any residue from the maintenance action to the HAZMINCEN. Unused HM shall be consolidated with like material and appropriate inventory adjustments made in HICS. Used HM shall also be consolidated with like material for offload per section C2302g. Empty containers free from contaminants shall be retained for future use with the same HM. Empty containers that are contaminated or cannot be reused shall be disposed of per the requirements of reference C23-4. Rags or other residual materials used with HM shall be processed aboard (if capable) or containerized for shore processing.

At the end of the workday, HAZMINCEN operators shall use HICS to print a report of workcenters delinquent in returning unused HM or empty containers. They should vigorously seek out any material not returned.

(e) **Lessons learned.** Through operation of the HAZMINCEN on prototype ships, the Navy has learned the following lessons:

1. Failure to meet the demands of a workcenter for a HM will probably result in the stockpiling of the HM by the workcenter in the future.

2. Resistance to change and mistrust of the HAZMINCEN's ability to provide needed HM must be overcome with exceptional response time, material availability, and reduction (to the greatest extent possible) of paperwork demands upon the customer. An around-the-clock operation is essential.

3. It is likely that large amounts of excess, expired, or used HM will be collected in the initial phases of implementation and will require off-loading to a shore facility. Space must be set aside to accommodate this material and advanced planning with the supporting shore facility is necessary to enable a smooth and rapid transfer of this material off the ship.

#### **C2304. GENERAL STORAGE REQUIREMENTS**

The following general precautions must be observed to minimize hazards inherent in the handling and storage of HM:

##### **NOTE:**

Precautions are applicable to storage of HM in all locations.

a. Material normally thought to be safe may become hazardous under certain conditions. When containers leak or are heated, chemical reactions may result, leading to fire, explosion, or release of toxic reaction products. Consequently, stowage of chemicals must be accomplished in such a way that incompatible chemicals are segregated and separated.

b. Stow all large quantities of flammable and combustible liquids with a flashpoint less than 200°F in flammable liquid storerooms, ready service storerooms, or issue rooms. Coolants, hydraulic fluids, lubricants, and aerosols shall also be stowed in one of the above. Use in-use flammable liquid cabinets within or near the workspace to stow a limited quantity of

flammable liquids used routinely on a daily basis. Do not use in-use flammable liquid cabinets to store more than 30 gallons of flammable liquid per space.

- c. Post HM stowage locations with a CAUTION sign that states:

**HAZARDOUS MATERIAL STORAGE AREA**

Obtain these signs through the Navy supply system using National Stock Number (NSN) 9905-01-342-4851 (10" X 7") or 9905-01-342-4859 (3" X 5").

- d. Permanently mount a label on lockers and cabinets used for in-use flammable and combustible liquids worded as follows:

**FLAMMABLE/COMBUSTIBLE LIQUIDS**

**DURING STRIP SHIP CONDITION, THE CONTENTS OF THIS CABINET SHALL BE RELOCATED TO A FLAMMABLE LIQUIDS STOREROOM, ISSUE ROOM, OR READY SERVICE STOREROOM.**

- e. Ensure that HM stowage locations other than cabinets and lockers are equipped with supply and exhaust ventilation. Keep ventilation system in good operating condition. All HM stowage areas must be evaluated by an industrial hygienist prior to designated stowage of HM.

- f. Restrict access to HM stowage locations to personnel authorized by the responsible division officer. **Entry to confined locations shall occur only after obtaining the gas free engineer's approval as specified in Chapter B8 of this manual.**

- g. Mark stowage compartments to identify type of HM stored and keep the compartment/materials clean and dry at all times.

- h. Do not transfer material to any container that was previously used for a different material without first checking the materials' compatibility. If unsure, check with the HM Coordinator.

- i. Stow incompatible materials in separate compartments to prevent mixing in the event of a spill. See appendix C23-C: Hazardous Material Compatibility Storage Diagram. Appendix C23-D provides information on stowage requirements based on the hazard characteristic code (HCC) found in HMIS.

- j. Stow HM only in containers that are compatible with the material (e.g., do not place corrosive materials in metal drums).

- k. If space limitations necessitate storing incompatible materials in the same compartment, maintain a separation distance of at least 3 feet. This provides only limited protection and all precautions, such as a high coaming, shall be used to prevent accidental mixing. Coamings will not prevent vapors, generated from incompatible HM in spaces, from mixing and reacting.

- l. Stack containers so that they will not crush lower containers, become imbalanced, or be difficult to access.
- m. Issue material on a first-in, first-out basis, considering shelf life.
- n. Prohibit smoking, eating, or drinking in stowage areas.
- o. Never permit open flames or spark producing items in HM stowage areas.
- p. The gas free engineer shall monitor stowage compartments for oxygen depletion, suspect explosive atmospheres, presence of potentially toxic vapors, and CO<sub>2</sub> accumulation any time the question arises as to the safety of a stowage area.
- q. Operate only explosion-proof electrical equipment in a potentially explosive environment.
- r. Seal and protect all containers against physical damage and secure for heavy seas.
- s. Maintain explosion-proof electrical fixtures in proper condition in applicable HM stowage areas.
- t. Do not stow HM in spaces or locations not designated for such stowage.

**C2305. GENERAL HANDLING AND USE REQUIREMENTS**

The *Hazardous Material User's Guide* (OPNAV Publication P-45-110-91) provides information on the handling and use of 22 HM groups. This guide should be consulted for precautions on handling and use of HM within these groups. Observe the following general requirements when handling HM:

- a. Work center supervisors shall ensure that, prior to using any HM, personnel under their supervision are trained on the hazards associated with that material, and that they have been provided with necessary protective clothing and equipment (i.e., eye protection, respirators, and gloves).
- b. Workcenter supervisors shall ensure that adequate supply and exhaust ventilation is maintained in all spaces where HM is used, that such systems are in good operating condition, and that they have been evaluated as adequate by an industrial hygiene survey team. Keep ventilation intakes clear of HM at all times.
- c. Never store excess supplies of HM in work areas. Return surplus material to the appropriate storage area or HAZMINCEN when not being used.
- d. Handle incompatible materials in separate compartments to prevent mixing in the event of a spill.
- e. Never mix incompatible materials in the same collection containers.
- f. Avoid breathing vapors or dust when using HM.

- g. Avoid contact with the eyes or prolonged contact with skin when using HM.
- h. Prohibit smoking, drinking, or eating in areas where HM is used.
- i. Ensure personal protective equipment (eye protection, respirators, gloves appropriate to the HM in use, etc.) is in good operating condition and is readily available to all personnel working with HM.
- j. Eye protection against irritating or corrosive chemicals shall consist of chemical goggles and full-face shields which have been cleaned and disinfected before being issued to another wearer.
- k. Before entering spaces that have been closed for significant periods of time, have a gas free engineer determine that atmosphere is safe for entry.
- l. Use an appropriately selected and fitted respirator when potentially exposed to particulate matter, hazardous gases, or vapors. When in doubt, consult the MDR for specific guidance in this regard or for a determination of the need for more stringent respiratory protection requirements.

**C2306. FLAMMABLE AND COMBUSTIBLE MATERIAL**

A flammable material is any solid, liquid, vapor, or gas that will ignite easily and burn rapidly with a flash point less than 1500°F. A flammable liquid is defined by the National Fire Protection Association (NFPA) as a liquid with a flash point below 100°F and having a vapor pressure not exceeding 40 lbs/square inch. Liquids having a flash point at or above 100°F are combustible liquids. All flammable and combustible liquids pose a danger to personnel and the ship, particularly those liquids having flash points below 200°F. Never carry flammable or combustible liquids aboard ship in quantities in excess of that required. Stow flammable and combustible liquids in approved locations. Dispense flammable and combustible liquids from shipping containers only into safety cans or other approved portable containers. Never use flammable or combustible liquids near a heat source or spark-producing device.

**a. Storage Requirements**

(1) Store flammable and combustible materials following the precautions listed in paragraph C2304.

(2) Store flammable and combustible materials separately from oxidizing materials (i.e., sodium nitrate, calcium hypochlorite, potassium permanganate, peroxides, and strong inorganic acids (nitric, hydrochloric, and sulfuric acids)). See appendix C23-C: Hazardous Material Compatibility Storage Diagram.

(3) Authorized storage locations for flammable and combustible materials are limited to the following:

<u>Material</u>	<u>Location</u>
(a) Liquids with flash points below 200 degrees Fahrenheit	Flammable liquids storeroom/ in-use flammable liquids stowage cabinet (in-use material only).

**NOTES:**

1. No in-use storage of these materials is allowed in machinery spaces.
2. In nuclear powered ships, small amounts of isopropyl alcohol (less than two quarts) may be stowed in a nucleonics room or secondary chemistry room cabinet.

<u>Material</u>	<u>Location</u>
(b) Solids and semi-solids which readily give off flammable vapors.	Flammable liquids storeroom
(c) Solids which burn with extreme rapidity because of self-contained oxygen.	Flammable liquids storeroom/ in-use flammable liquids stowage cabinet
(d) Materials which ignite spontaneously when exposed to air.	Flammable liquids storeroom
(e) All lubricating oils and petroleum products with a flash point greater than or equal to 200 degrees Fahrenheit but less than 1,500 degrees Fahrenheit.	Flammable liquids storeroom/ flammable liquids commercial cabinet (in-use material only)/Up to 12 Gals. within a coaming capable of containing the total amount stowed (in-use material only)

(f) Store cargo of the type described in (e) above, carried by **Cargo Ships and Oilers** in either a cargo hold under fixed HALON or CO<sub>2</sub> gas flooding or sprinkler protection or on the weather deck under protection from the elements. Normally stow used/excess HM aboard combat logistics force ships, carried for the purpose of easing used/excess HM stowage requirements of combatants or for retrograding such material to the continental U.S. (CONUS), on the weather deck under protection from the elements unless below decks cargo stowage for this material is available aboard the ship.

(g) Ensure ordinary combustible materials such as rags, paper and wood are not stowed in flammable stowage areas; however, oily rags should be stowed in these areas after being placed in suitable containers.

(4) Prohibit open flames or spark-producing items in flammable stowage areas.

(5) Ensure containers are secured with metal banding or other approved tie-downs vice manila line.

**b. Handling and Usage Requirements**



(1) Handle and use flammable and combustible materials per the precautions listed in paragraph C2305. Many flammable and combustible materials have additional hazardous properties, such as toxicity. See also paragraph 2307.

(2) Never use a flammable material near a heat source or a spark-producing device. Do not smoke in an area in which flammable material is being used. Post spaces in which flammable materials are used as **NO SMOKING** areas.

(3) Keep scrapings and cleaning rags soaked with flammable or combustible liquids in a covered metal container. Do not leave scrapings and cleaning rags in a soaked state even in a covered metal container for longer than one work shift. Treat such materials as used/excess HM, containerize to prevent leakage, and properly label and store.

(4) Ensure that containers of partially used flammable materials are returned to proper stowage facilities, are tightly closed, and are properly labeled.

(5) Keep suitable fire extinguishing equipment and materials ready at all times for instant use.

**C2307. TOXIC MATERIAL**

A toxic material has the inherent capacity to produce personal injury or death through ingestion, inhalation, or absorption through any body surface. Toxic materials are considered, and often marked by the manufacturer as being, poisonous. Avoid contact with toxic materials by the proper use of suitable impermeable protective clothing, respiratory protection, and by strictly following all prescribed safe-handling procedures. Solvents, degreasers, refrigerants, mercury, and hydraulic fluids are but a few of the toxic materials that may be found aboard ship. If stowed, handled, and used in the proper manner, they present little or no danger.

**a. Storage Requirements**

(1) Store all toxic material per the precautions listed in paragraph C2304. Many toxic materials have additional hazardous properties, such as flammability or combustibility. See also paragraph C2306.

(2) Store all toxic material in cool, dry, well ventilated spaces separated from all sources of ignition, acids and acid fumes, caustics, and oxidizers. See appendix C23-C: Hazardous Material Compatibility Storage Diagram.

(3) Seal all containers and protect them against physical damage.

**b. Handling and Usage Requirements**

(1) Handle and use toxic materials per the precautions listed in paragraph C2305.

(2) Use appropriate gloves and protective clothing when handling sensitizers or potential skin irritants such as epoxy and polyester resins and

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hardeners where significant skin contact is likely. Protective skin cream shall only be used to supplement, but not replace, the appropriate gloves for any operation where significant contact with potentially toxic/irritant/sensitizing materials is likely.

c. **Halocarbons (Refrigerants)**. Liquid or gaseous halocarbons have multiple applications in the Navy. They are used as refrigerants, aerosol propellants, solvents, and dielectric fluids and as fire extinguishing and degreasing agents. Due to changes in the Clean Air Act, the use of halocarbons is being phased out; however, they are still used in the Navy. With common names of refrigerant R-11, R-12, R-22, R-113, R-114, and R-116, these products may be better known by names such as FREON, ISOTRON, FRIGEN, FLUORANE, FREON MF, FREON TF, GENSOLV D, BLACO-TRON TF, and ARKLONE P-113.

(1) To minimize the size of spills, procure, store, and use halocarbons in the smallest amount and container possible for an operation.

(2) All normally used halocarbons are stocked in the Naval Supply System and should be procured only through that system.

(3) Prohibit smoking and hot work in areas or vicinity where halocarbons are being used.

(4) Prohibit storage and consumption of food and tobacco in areas where halocarbons are being used.

(5) Some types of FREON are nearly odorless and can numb the sense of smell.

(6) Only use FREON-113 as a solvent when specified and when such use is essential.

d. **Toxic Cleaning Solvents**. Conduct shipboard operations involving toxic cleaning solvents in a manner which will not result in exposure of personnel to hazardous concentrations of airborne materials, significant or prolonged skin contact, the creation of a potentially explosive atmosphere, or reduce oxygen levels below safe limits. Ensure spaces subject to accidental or uncontrolled concentration of toxic vapors are checked by a gas free engineer and certified safe for entry prior to beginning work. Use mechanical exhaust ventilation (explosion proof) to exhaust vapors overboard to prevent reentry and recirculation. Eliminate sources of ignition of vapors prior to ventilating such spaces. For normal cleaning operations:

(1) Whenever practicable, completely enclose the cleaning operation to prevent escape of vapors into working spaces.

(2) Ensure exhaust ventilation is available to remove or dilute the concentration of the vapors for the entire work period. If exhaust ventilation is not present to lower vapor concentration, use respiratory protection equipment.

(3) Wear gloves appropriate to the HM in use and chemical goggles, at a minimum, to protect the skin and eyes from exposure.

(4) Use chemical goggles and other protective clothing appropriate to the HM in use to protect the face, neck, arms, hands, and body when using acid or alkali cleaners.

e. Trichloroethane (also known as 1, 1, 1-Trichloroethane and inhibited methyl chloroform) is a halogenated hydrocarbon extensively used as a solvent for greasy films and oil deposits on machinery and other equipment. When properly used, its vapors have a low order of toxicity. However, vapors of this solvent, especially when sprayed or heated, will readily accumulate in confined spaces and increase the chance of harmful exposure. Trichloroethane is toxic if taken internally and when heated, separates into subproducts which may be more toxic.

f. Mercury represents a potential personnel health hazard if ingested, absorbed through the skin, or inhaled. Inorganic or elemental mercury can vaporize at room temperature in amounts hazardous to the health. In addition to health hazards, mercury may be damaging to materials and equipment. Mercury and its compounds are especially corrosive to certain non-ferrous metals and their alloys, such as aluminum, copper, and silver.

(1) Mercury Storage

(a) Store mercury and mercury compounds, including waste, in a cool, dry, well-ventilated area. The storage area shall be well away from sources of heat.

(b) Secure mercury containers to avoid accidental breakage or spillage, and keep in trays or shelves with sufficient coaming to contain the contents, if spilled.

(c) Store mercury and mercury compounds in their original containers, whenever possible. Tightly seal containers with a stopper or cap and keep closed when not actually in use. Label containers per paragraph C2302e.

(d) Clean up mercury or mercury compound spills immediately.

(e) Store small quantities of mercury in a NAVSEASYS COM mercury storage locker, NAVSEA drawing number 803-5184175.

(2) Mercury Use. Personnel engaged in mercury handling shall:

(a) Wear protective clothing as necessary to prevent their skin and clothing from coming in contact with mercury. Such protective clothing includes rubber or plastic clothes, aprons or equivalent coveralls, and rubber-soled shoes or rubber boots.

(b) Remove all jewelry that could become contaminated with mercury.

(c) Not eat, drink, smoke, or apply cosmetics in a mercury handling area.

(d) Wash with soap and water immediately after working with mercury or mercury components, and prior to eating, drinking, smoking, or applying cosmetics.

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(e) Carefully examine clothing after any mercury spill and at the end of each work session. Any clothing found to be contaminated with mercury or mercury compounds shall be cleaned of visible mercury, then removed, placed into double plastic bags and disposed of as mercury waste.

(f) Prior to handling or transporting any instrument or equipment containing mercury, seal, cap, plug, or double-bagged the item in plastic to prevent spillage.

(g) Immediately and properly clean up spilled mercury.

(h) Not use compressed air for cleaning up spilled mercury.

(i) Avoid allowing mercury to contact hot surfaces that could accelerate vaporization and increase the inhalation hazard.

(j) Decontaminate equipment used in handling mercury after each work session.

g. Polychlorinated Biphenyls

(1) In general, PCBs, if properly managed, do not present a major health hazard. The Environmental Protection Agency banned PCBs in most manufacturing processes in 1979. However, PCBs may be found as a fire retardant in many materials used in ship construction where stocks of PCB material purchased prior to the ban were consumed. Some examples of shipboard materials used in ship construction which may contain PCBs include: sound dampening on reduction gears; electrical cable insulation; foam hull insulation; rubber (used as banding and sheet rubber for cableways, pipe hanger liners, isolation mount, and vent gaskets); packing and grommets for electrical cable stuffing boxes; and pipe insulation and lagging.

**NOTE:**

PCB-containing construction materials installed in Navy ships need not be removed because they contains PCBs. Installed PCB-containing construction materials normally need not be labeled.

(2) Label PCB-containing electrical/electronic components (primarily capacitors) per the guidance provided in reference C23-5. Label PCB-contaminated tools and waste materials (such as dust from ventilation ducting which are known to contain PCB-impregnated felt gaskets) per paragraph C2307g(4)(c).

(3) With the exception of ventilation duct cleaning, work involving known or potential PCB-containing materials shall normally be accomplished in port. Obtain assistance through the nearest naval shipyard environmental program office, Navy medical treatment facility, or NAVENPVNTMEDU prior to such action.

(4) For situations not involving unprotected PCB skin contact, employ routine work and personal hygiene measures (such as washing hands and other

exposed skin surfaces with soap and water when work is completed) appropriate for any occupational setting.

(a) When working with PCB-impregnated materials such as insulating felts or with articles that contain liquid PCB solutions, strictly observe good housekeeping procedures to avoid the possibility of secondary surface contamination.

(b) Personnel involved in PCB-related work activities shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the space in which work is being performed.

(c) Collect and dispose of PCB-containing waste, scrap, and debris; dust collected from ventilation systems known or suspected of containing PCB-impregnated felt gaskets; and PCB-contaminated clothing (consigned for disposal) in sealed impermeable containers specified in appendix C23-A and labeled with the large label described in appendix C23-E. Disposal should be per the procedures of section C2302g. Specifically notify the receiving activity that PCBs or material containing PCBs is being transferred.

(d) Do not perform hot work in the immediate area when work is performed with PCBs or PCB-containing material. Do not perform hot work, including welding, torch cutting, brazing, grinding, and sawing on ventilation systems components within 12 inches of either side of a flange containing felt gaskets.

(e) Specific work practices for the removal and handling of PCB felt, maintenance and cleaning of ventilation ducting containing PCB felt, and maintenance and handling of other shipboard PCB materials are provided in reference C23-5.

(f) Label all reusable cleaning equipment employed in cleaning systems potentially contaminated with PCBs with PCB labels described in appendix C23-E. Use the large label whenever practicable. If the large label does not fit, use the small label. Equipment to be labeled includes vacuum cleaner, vacuum hoses and working end tools, brushes, Vent Duct Cleaning System components, dust pans, scrapers, and putty knives. Label; bag, where possible; and stow this equipment in a location where it will not be accidentally used for other purposes.

(5) The baseline industrial hygiene survey shall specify personal protective equipment and medical surveillance for any potential PCB-related work.

#### **C2308. CORROSIVE MATERIALS**

Corrosive materials are chemicals such as acids, alkalis, or other liquids or solids which, when in contact with living tissue, will cause severe damage to such tissue by chemical action. In case of leakage, corrosive material will materially damage surfaces or cause fire when in contact with organic matter or with certain chemicals.

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a. **Storage Requirements**

(1) Store all corrosive materials per the precautions listed in paragraph C2304.

(2) Store corrosive materials in their properly labeled, original containers.

(3) Ensure that acids and alkalis are stowed separately from each other.

(4) Ensure corrosive materials are not stored near oxidizers or other incompatible materials. See appendix C23-C: Hazardous Material Compatibility Storage Diagram.

b. **Handling and Usage Requirements**

(1) Handle and use corrosive materials per the precautions listed in paragraph C2305.

(2) Wear chemical goggles and full-face shields, rubber gloves, rubber boots, and aprons when handling acids or other corrosive materials.

(3) Never allow corrosive materials or their vapors to come in contact with the skin or eyes.

c. **Inorganic Acids**

(1) Stow liquid inorganic acids, such as hydrochloric, sulfuric, nitric and phosphoric acids bottled in glass or plastic in such a manner that they are cushioned against shock. They should be kept in their original shipping carton inside suitable acid-resistant lockers, cabinets or chests, located in storerooms below the full-load waterline. Except where stowed in chests or lockers, the lower part of the bulkheads where acids are stored shall be provided with a watertight acid-resistant rubber lining.

(2) Maintain hydrofluoric acid in acid-proof polyethylene or ceresin-lined bottles at all times and never allow them to come in contact with skin or eyes.

(3) Stow medical acids in lead-lined containers in the medical storeroom.

(4) Do not stow inorganic acids in flammable liquid storerooms, except when contained within an acid stowage locker. Since many inorganic acids are oxidizers, stowage in a flammable liquid storeroom, even in an acid locker, should be avoided.

d. **Organic Acids.** Do not permit liquid and solid organic acids, such as glacial acetic, oxalic, carbolic, cresylic, and picric acids to come in contact with the eyes or skin. These acids are corrosive to aluminum and its alloys, to zinc, and to lead. Keep these acids, usually packaged in glass bottles, from freezing and physical damage. Stow these acids in a locker lined with acid-resistant material in the flammable liquids storeroom separated by a partition, or by at least 3 feet, from all other material.

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e. **Alkalis**. Stow alkalis (bases), such as lithium hydroxide, sodium hydroxide, potassium hydroxide (lye), disodium phosphate, trisodium phosphate, sodium carbonate, and ammonium hydroxide (ammonia water) in designated lockers, cabinets, or chests. Keep alkalis separated from acids, oxidizers, and other incompatible materials. Ensure the stowage area is dry.

**NOTE:**

Many shipboard cleaning agents and laundry materials contain alkalis in very strong concentrations. Specified stowage and handling precautions for these materials must be observed.

**C2309. OXIDIZERS**

An oxidizer is any material, such as chlorate, perchlorate, permanganate, peroxide, or nitrate which yields oxygen readily to support the combustion of organic matter, or which may produce heat, or react explosively when it comes in contact with many other materials. Higher temperatures increase the possibility of oxygen release from oxidizers and the possible initiation of fire. Heat shall be avoided when handling and storing oxidizers.

a. **Storage Requirements**

(1) Store oxidizers following the precautions listed in paragraph C2304.

(2) Do not store oxidizers in an area adjacent to a magazine or heat source or where the maximum temperature exceeds 100 degrees Fahrenheit under normal operating conditions.

(3) Ensure that oxidizers are not stored in the same compartment with easily oxidizable material such as fuels, oils, solvents, grease, paints, or cellulose products. See appendix C23-C: Hazardous Material Compatibility Storage Diagram.

b. **Handling and Usage Requirements**

(1) Handle and use oxidizers per the precautions listed in paragraph C2305.

(2) Do not use oxidizers in an area where they might mix with easily oxidized materials (i.e., fuels, solvents, oils, grease, paints, or cellulose products).

(3) When transferring oxidizers to second containers, **ensure that the second container is compatible with the oxidizing material**. Place appropriate warning labels on the second container.

(4) Do not remove or obliterate warning labels from containers.

(5) Ensure oxidizing materials are only handled or used by authorized personnel.

c. **Calcium hypochlorite** is a very strong oxidizer used to provide the sanitizing and bleaching property of chlorine without requiring the handling of liquid or gaseous chlorine.

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(1) The following precautions apply to the stowage of calcium hypochlorite:

(a) Stow the ready usage stock of 6-ounce bottles issued to the medical and engineering departments in a locked box mounted on a bulkhead, preferably in the cognizant department office space. Do not, under any circumstances, install the box in a machinery space, flammable liquids storeroom, berthing space, storeroom, or in the oil and water test laboratory areas. A metal box such as a first aid locker is recommended for this purpose. Drill three vent holes in the bottom of the box, each 1/4-inch in diameter, to allow the release of any chlorine products. (The metal box is a standard stock item, readily available, is relatively inexpensive and requires only repainting to be suitable). No more than 3 days' supply of calcium hypochlorite shall be maintained in ready usage stock at any one time. Only 6-ounce bottles are to be used as ready usage. The use of 3-3/4-pound bottles of calcium hypochlorite as ready usage stock is prohibited.

(b) Stow ready usage stock for sewage disposal treatment in steel or aluminum cabinets or racks located on a bulkhead in the macerator-chlorinator space. Do not stow paints, oils, greases, or combustible organic material in this space. Equip cabinets or racks with shelving and retaining bars to secure the individual containers.

(c) Stow storeroom stocks in labeled, ventilated lockers, or bins. Locate these lockers or bins in an area where the maximum temperature will not exceed 100 degrees Fahrenheit under normal operating conditions and which is not subject to condensation or water accumulation. The area shall not be adjacent to a magazine, and the lockers and bins shall be located at least 5 feet from any point heat source or surface that may exceed 140 degrees Fahrenheit. Do not locate these lockers in an area used for stowage of paints, oils, greases, or combustible organic materials. Do not stow more than 48 6-ounce bottles or 36 3-3/4-pound bottles in any individual locker or bin. Only issue calcium hypochlorite to personnel designated by the medical or engineer officer.

(d) Stow calcium hypochlorite, carried as cargo, in a separate enclosure constructed of steel or expanded metals. Ensure that the enclosure has a secure door. Do not locate the enclosure in an area used for stowing paint, oils, greases, or other combustible materials. Locate the enclosure in an area where maximum temperature will not exceed 100 degrees Fahrenheit under normal operating conditions and is not subject to condensation or water accumulation. Do not locate the enclosure adjacent to a magazine and within 5 feet from any point heat source. Sprinkler protection is not required but need not be avoided. For unpalletized material, equip the enclosure with shelving and retaining bins to contain securely the individual boxes.

(e) Label all lockers, bins, and enclosures with red letters on a white background:

**HAZARDOUS MATERIAL, CALCIUM HYPOCHLORITE**

(2) The following precautions apply when using calcium hypochlorite:

(a) Mix only with water.



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(b) Do not allow to come into contact with paints, oils, greases, wetting agents, detergents, acids, antifreeze, alkalis, or organic and combustible materials.

(c) Do not remove or obliterate warning labels.

(d) Dispense only in clean, dry utensils and only in amounts required for immediate use.

(e) Avoid contact with skin and eyes.

(f) Ensure containers are not used for any other purpose.

(g) For external contact or if taken internally, follow the instructions printed on the container label or in the MSDS.

(h) No special firefighting precautions are required for fires caused by calcium hypochlorite.

d. **Organic Chlorine Laundry Bleach.** This bleach contains an organic chlorine-liberating compound and was selected as a less hazardous material to replace calcium hypochlorite as laundry bleach. However, under conditions of high heat and humidity, organic chlorine laundry bleach emits vapors that can be hazardous to personnel. Stow this bleach in a cool, dry place as far from conditions of high heat and humidity as possible. Do not mix with materials containing ammonia.

#### **C2310. AEROSOLS**

Materials in aerosol containers: An ever-increasing demand exists for pressurized (aerosol) dispensers for the dispersal of paints, enamels, lacquers, insecticides, inspection penetrant kits, lubricating oils, silicones, shaving creams, and rust preventatives. The aerosol propellants may be low-boiling halogenated hydrocarbons or other hydrocarbons that are flammable, such as propane or isobutane. The contents of the aerosol-type pressurized containers are under pressure, and exposure to heat may cause bursting of the dispensers. The propellants in higher concentrations are anesthetic, asphyxiating, and extremely flammable. The decomposition products formed when propellants contact open flames or hot surfaces may be corrosive, irritating, or toxic.

##### **a. Storage Requirements**

(1) Stow aerosols following the precautions listed in paragraph C2304.

(2) Ensure that inside stowage of aerosols is in the flammable liquid storeroom. See appendix C23-C: Hazardous Material Compatibility Storage Diagram.

(3) Stow ship's stores aerosol stock items in the flammable liquid storeroom.

(4) Do not stow containers in areas with temperatures above 120 degrees Fahrenheit or adjacent to steam lines, hot zones, or heat sources.

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(5) Limit ready-usage stocks of any one product located at work areas to 1-week's supply.

b. **Handling and Usage Requirements**

(1) Handle and use aerosols per the precautions listed in paragraph C2305.

(2) Never use aerosols near a heat source or a spark-producing device. Do not smoke in the area in which aerosol material is being used.

(3) Keep aerosol containers away from steam lines, electronic equipment, hot water, and other heat sources.

(4) Avoid prolonged exposure of aerosol containers to sunlight.

(5) Avoid prolonged or repeated inhalation of aerosol spray or vapors of residual liquid.

(6) Do not disperse aerosol spray near flames, hot surfaces or ignition sources due to potential hazards from thermal decomposition products.

(7) Ensure food or tobacco products are not contaminated with spray.

(8) Avoid accumulation of wetted rags or clothing that may be subject to spontaneous heating or ignition. Ignition may be initiated by the temperature of low-pressure steam pipes, the surfaces of incandescent light bulbs, sunlight, or any other heat source.

(9) Avoid accumulation of aerosol or flammable concentrations of aerosol spray or vapors in the air.

(10) Prohibit puncture or incineration of aerosol dispensers unless equipped with a NAVSEASYSCOM-approved can-puncturing device.

(11) Use aerosols containing material with a flash point less than 73 degrees Fahrenheit on board ship only when required for a specific use and authorized by the cognizant division officer.

**C2311. COMPRESSED GASES**

Aboard Navy ships numerous cylinders of compressed gases will be found. Compressed gases are used for welding operations (oxygen and acetylene), in refrigeration and air conditioning systems, and for purging various systems (nitrogen). Cylinders of compressed gases are potential explosion, fire, and health hazards if strict compliance with existing requirements are not met.

a. **Storage Requirements**

(1) **General**

(a) Only stow compressed gases, with the exception of flammable and explosive gases and ready service cylinders, in compartments designated for cylinder storage, as shown in applicable plans for each ship. Whenever practical, stowage shall permit removal of any cylinder without disturbing other cylinders. Such compartments shall:

1. Be kept free of all flammable materials (especially greases and oils).
2. Be maintained at temperatures below 130 degrees Fahrenheit.
3. Have instructions posted at all entrances requiring ventilation of the compartment for a period of at least 15 minutes prior to entry.

(b) Securely fasten each individual cylinder in the vertical position (valve end up) by metal collars and with horizontal restraints to meet Grade "B" shock mounting requirements.

(c) Stow cylinders by date of receipt, and place into service in the order of receipt.

(d) Tag empty cylinders EMPTY, or mark MT, and segregate from full or partially full cylinders.

(2) Oxygen

(a) Only stow oxygen cylinders in designated, well-ventilated spaces except as noted in paragraph C2311a(4)(b).

(b) Conduct an atmospheric analysis prior to entry into any sealed compartment where oxygen is stowed as specified in Chapter B8.

(3) Flammable and Explosive Gas Weather Deck Stowage. Unless approved below-deck stowage locations are shown on a ship's plan, all flammable and explosive gas storage shall be on the weather deck. Take the following precautions, in addition to those in section C2311a(1) when storing flammable or explosive gasses on the weather deck:

(a) Never stow oxygen bottles in close proximity to fuel gas cylinders.

(b) Screen cylinders from the direct rays of the sun.

(c) Protect cylinder valves during winter months from accumulations of snow and ice.

(d) Make every effort to prevent corrosion of threaded connections on cylinders. However, under no circumstances use grease or flammable corrosion inhibitors on oxygen cylinders.

(e) Ensure stowage areas are as remote as possible from navigating, fire control, and gun stations.

(f) Keep all flammable materials, especially greases and oils, out of the stowage area.

(4) Ready Service

(a) The following gas cylinders, when in use or staged for use, are permitted below decks outside of stowage compartments:

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1. Fire extinguishers (portable).
2. Fire-extinguishing cylinders permanently connected to fixed fire-extinguishing systems.
3. Gas and chemical canisters for oxygen breathing apparatus.
4. Welding cylinders.
5. Medical gas cylinders.
6. Cylinders containing refrigerants.
7. Disposable cylinders supplied as repair kit accessories (halide leak detector kits, for example).

(b) Welding Cylinders. Observe the following special instructions and precautions regarding oxygen and fuel gas cylinders in ready service:

1. Install cylinders of gas necessary to equip each authorized shop and repair locker in accordance with approved plans or specifications.
2. Fasten cylinders securely in a rack (stationary or wheeled). Ensure acetylene cylinders are always stowed vertically. Securely fasten the rack, in turn, to the bulkhead at the designated locations.
3. Never leave equipment unattended.
4. Return welding units to designated stowage as soon as work is complete.
5. Post the following warning at each designated stowage location:

**WARNING**

**NOT SECURE**

Unit is **NOT SECURE** while pressure shows on gauges, or when cylinders are not firmly fastened to rack or to bulkhead, or when rack is not firmly fastened to bulkhead. If removed from this location, constantly attend this unit until returned and secured.

6. Attach a card to each welding unit with the following instructions:

Return to (designated location) immediately on completion of work. Do not leave unit unattended while away from above location. Unit is **NOT SECURE** while pressure shows on gauges, or cylinders are not firmly fastened to rack, bulkhead, or stanchion.

**b. Handling and Usage Requirements**

(1) Never drop cylinders nor permit them to strike against one another violently.

(2) Never use a lifting magnet or a sling (line or chain) when handling cylinders. If a crane or hoist is used, provide a safe cradle or platform to hold cylinders.

(3) When returning empty cylinders, be sure that valves are closed and that valve outlet, if provided, and cylinder valve protection caps are in place.

(4) Be sure that all cylinders in the ship's stores are approved under Department of Transportation (DOT) regulations. Non-magnetic cylinders are an exception.

(5) Refill cylinders only when such action is specifically approved by the command.

(6) Fill a cylinder only with the gas for which the cylinder has been specifically designated.

(7) Do not remove or change the numbers or marks stamped into cylinders without the specific approval of the Defense General Supply Center.

(8) Never use cylinders for rollers, supports, or for any purpose other than to carry gas.

(9) Never tamper with the safety devices on valves or cylinders.

(10) Never hammer or strike the valve wheel in attempting to open or close valves. Use only wrenches or tools provided and approved for this purpose.

(11) Be sure that the threads of regulators or other auxiliary equipment are the same as those on cylinder valve outlets. Never force connections that do not fit.

(12) Do not use regulators, pressure gauges, manifolds, and related equipment that are provided for a particular gas on cylinders containing different gases.

(13) Repair or alter cylinders or valves only when authorized by NAVSEASYSKOM.

(14) Unless specifically authorized, never subject compressed gas cylinders, either in stowage or in service, to a temperature in excess of 130 degrees Fahrenheit. Do not allow a direct flame to come in contact with any part of a compressed gas cylinder. For carbon dioxide extinguishers in spaces above 130 degrees Fahrenheit, see NSTM 555.

(15) Protect cylinders from objects that will cut or otherwise abrade the surface of the metal.

(16) When testing for leaking gas cylinders, use soapy water or leak-detection compound conforming to MIL-L-25567.

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(17) Only use a gas cylinder that is properly marked (by color of paints or with the name of the gas stenciled on cylinder and valve). Return all mis-marked cylinders to the nearest Naval Supply Depot.

(18) Work center supervisors shall ensure that supply and exhaust ventilation exists in compartments where compressed gases are stored or in use, systems are in good operating condition, and have been evaluated as adequate by an industrial hygiene survey team.

(19) To thaw out valve outlets that are clogged with ice, use warm (not boiling) water. The use of boiling water will melt the fusible plugs, if present, and vent the cylinders.

(20) Never discharge a cylinder into any device or equipment in which the gas will be entrapped and create pressure. The only exception is a cylinder equipped with a pressure regulator set to control the pressure.

(21) Never use oil-tolerant gases when oil-free gases are required. This practice is discouraged by the fact that valve outlets are not interchangeable, however, there have been cases in which this safety feature has been overcome by homemade adapters.

c. Recharging Cylinders Aboard Ships

(1) Recharge only oxygen, nitrogen and carbon dioxide cylinders, except as noted in paragraph C2311c(2).

(2) Ensure that the recharging is supervised by a graduate of the Fleet Training Center Cryogenics School.

**NOTE:**

Small cylinders of hydrogen routinely used for nuclear propulsion plant operations may be refilled without a graduate of Cryogenics School being present.

(3) Recharge a cylinder only if less than 5 years have passed since its last hydrostatic test date. The only exceptions are 3A and 3AA cylinders having water capacities under 125 pounds, for which a 10-year hydrostatic test frequency is approved. For fire extinguisher and fire extinguishing system cylinder hydrostatic test requirements, see NSTM Chapter 555.

(4) If evidence of oil or grease above the neck ring is present, do not recharge oxygen cylinders.

(5) Before recharging, sniff-test each cylinder for evidence of contamination by a foreign gas. Oxygen and oil-free nitrogen cylinders should be odorless. An oily odor from these cylinders indicates hydrocarbon contamination. Do not recharge contaminated cylinders.

(6) Keep shipboard oxygen cylinders (aviators' breathing oxygen) and nitrogen cylinders dry by not allowing the cylinder pressure to go below 25 lb/in<sup>2</sup>g. Consider a cylinder wet if there is insufficient internal pressure to cause a hissing noise when the valve is opened.

**CHAPTER C23**

**REFERENCES**

- C23-1 OPNAVINST 5090.1B, Environmental and Natural Resources Program Manual (NOTAL)
- C23-2 NAVSUP Publication 4105, List of Items Requiring Special Handling (NOTAL)
- C23-3 NAVSUPINST 4410.52B, Shelf-Life Item Identification, Management, and Control (NOTAL)
- C23-4 OPNAV Publication P-45-114-95, CNO Policy Guide for Shipboard Hazardous Material Container Disposal (NOTAL)
- C23-5 NAVSEA S9593-A1-MAN-010, *Shipboard Management Guide to PCBs* and associated NAVSEA issued PCB Advisories (NOTAL)

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Acetic acid	Plastic bottle; plastic-lined steel drum
Acetic acid, glacial	Plastic bottle
Acetone	Tin can; steel drum, bung, and vent
Activator/stabilizer (sodium borate)	Plastic-lined steel drum
Adhesive, lagging (organic polymer)	Steel drum
Adhesive, N.O.S. <sup>5</sup>	Steel drum
AFFF (aqueous film forming foam)	Variable <sup>2</sup>
Alodine 1201 (chromic acid)	Glass carboy
Ammonia solution, nickel electroplating	Plastic bottle
Aniline	Tin can; steel drum, bung, and vent
Asbestos	6 mil (6/1,000 inch) plastic bag
Batteries (lead-acid or alkaline wet cell)	Steel drum <sup>4</sup>
Battery acid (sulfuric)	Plastic bottle; plastic-lined steel drum <sup>3</sup>
Baygon (phenolic pesticide)	Steel drum, bung, and vent
Blanket wash (acacia gum)	Steel drum
Bulbs, fluorescent light (with mercury)	Original carton
Chemicals, photographic, N.O.S. <sup>5</sup>	Plastic bottle
Chromium electroplating solution	Plastic bottle
Citric acid	Plastic bottle <sup>3</sup>
Cleaner, chemical, N.O.S. <sup>5</sup>	Tin can; steel drum
Cleaning solvent, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Cobalt electroplating solution	Plastic bottle



**Appendix C23-A**

**HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS**

**PART 1**

**SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE**

<b>Hazardous Material</b>	<b>Container<sup>1</sup></b>
Compound, epoxy	Steel drum
Compound, silicone	Steel drum
Concentrated Solutions (photo refresher) N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Copper electroplating solution	Plastic bottle
Compound, antiseize (graphite-petroleum)	Steel drum, removable cover
Compound, antiseize (lead oleate)	Steel drum, removable cover
Compound, boiler passivator (oxalic acid)	Plastic-lined steel drum
Compound, descaler (caustic/acid)	Plastic-lined steel drum
Compound, sealing (synthetic polymer)	Steel drum
Damping fluid (petroleum base)	Tin can
Darco drycoal activated	Steel drum (for contaminated material, removable cover)
Developer, N.O.S. <sup>5</sup>	Plastic-lined steel drum
Disinfectant, fungisol (quinone)	Plastic bottle
Disinfectant, general purpose	Steel drum, bung, and vent
Disodium phosphate	Steel drum, removable cover
Earth, diatomaceous (filter)	Plastic-lined steel drum (for contaminated material)
Electroplating etching solution, N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Ethylene glycol (antifreeze)	Plastic-lined steel drum
Ethyl alcohol	Plastic bottle
Fiberglass epoxy	Steel drum
Fixer (w/silver halides), N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum

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HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Flux (sodium nitrate/nitrite) N.O.S. <sup>5</sup>	Tin can; steel drum
Formic acid solution, nickel electroplating	Plastic bottle; plastic-lined steel drum
Freon	Plastic bottle; plastic-lined steel drum
Grease, ball bearing	Steel drum, removable cover
Grease, general purpose	Steel drum, removable cover
Grease, graphite	Steel drum, removable cover
Grease, halocarbon	Steel drum, removable cover
Hydraulic fluid (petroleum)	Steel drum, removable cover
Hydraulic fluid (synthetic)	Epoxy-lined steel can; plastic lined steel drum
Hydrochloric acid	Plastic bottle <sup>3</sup>
Hydrofluoric acid	Plastic bottle
Hydrogen peroxide	Plastic bottle; plastic-lined steel drum
Hypo cleaning (ammonium persulfate)	Plastic-lined steel drum
Indicator, stop bath (organic dye)	Steel drum, bung, and vent
Ink, black oil based	Steel drum, bung, and vent
Insecticide diazinon (organophosphate)	Tin can; steel drum, bung, and vent
Isopropyl alcohol	Plastic bottle
Lacquers	Tin can; steel drum, bung, and vent
Leak test (penetrant)	Plastic bottle
Lithographic solutions, N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Lithographic solvents, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Mercuric nitrate	Plastic bottle

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HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Mercury (amalgam)	Plastic bottle
Mercury remover (calcium oxide-sulfur)	Steel drum, removable cover
Methyl alcohol	Plastic bottle
Methyl ethyl ketone	Steel drum, bung, and vent
Molybdenum graphite, drylube	Steel drum, removable cover
Molybdenum nickel 447	Plastic bottle
Morpholine, 40 percent	Tin can; steel drum <sup>3</sup> , bung, and vent
Naphtha	Steel drum, bung, and vent
Nickel, chromium, aluminum 441	Tin can; steel drum, removable cover
Nickel solutions	Plastic bottle
Nitrate, silver	Plastic bottle; plastic-lined steel drum
Nitric acid	Glass carboy
Nonskid flight deck compound (asphaltic)	Steel drum, removable cover
Oil, cutting (synthetic)	Epoxy-lined steel can
Oil, liquid coolant (synthetic)	Epoxy-lined steel can
Oil, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Oxygen breathing apparatus canister	Fiberboard box
Paint, enamel, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Perchloroethylene	Steel drum, bung, and vent
Petrobond sand with waste oils	Steel drum, removable cover
Phosphoric acid	Plastic bottle; plastic-lined steel drum
Pinso pads (shellac)	Steel drum, removable cover

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Polychlorinated Biphenyls (PCB's), items containing	Polyethylene lined steel cans; plastic-lined steel drum, bung, and vent/removable cover
Remover, paint (caustic)	Plastic bottle; plastic-lined steel drum
Resin, ion exchange (activated polymers)	Steel drum (for contaminated material)
Resin, laminating (plastic)	Steel drum
Reverser (aromatic hydrocarbon reducers)	Steel can
Silver solutions	Plastic bottle
Sodium chromate (ballast)	Variable <sup>2</sup>
Sodium chromate	Plastic bottle
Sodium cyanide solution, gold electroplating	Plastic bottle
Sodium hydroxide solid	Steel drum, removable cover
Sodium hydroxide solution	Steel can; steel drum <sup>3</sup> , bung, and vent
Sodium nitrate	Steel drum
Sodium phosphate	Steel drum <sup>3</sup>
Stannous chloride	Plastic bottle
Stannous fluoride	Plastic bottle
Stop bath, N.O.S. <sup>5</sup>	Plastic bottle
Sulfamic acid solid	Plastic-lined steel drum
Sulfamic acid solution	Plastic bottle; plastic-lined steel drum <sup>3</sup>
Sulfuric acid	Glass carboy; plastic bottle; plastic-lined steel drum
Thinner (organic), N.O.S. <sup>5</sup>	Tin can; steel can; steel drum

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Tin plating solution	Plastic bottle
Tin 2090	Plastic bottle
Toluene	Tin can; steel can; steel drum, bung, and vent
Trichloroethane solvent	Tin can; steel can; steel drum, bung, and vent
Trichloroethylene	Tin can; steel can; steel drum, bung, and vent
Trichlorofluoromethane	Tin can; steel can; steel drum, bung, and vent
Trisodium phosphate	Steel drum <sup>3</sup>
Varnish, insulating electrical	Steel drum, bung, and vent
Varnish, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Varnish, phenolic resin	Steel drum
Xylene	Tin can; steel can; steel drum, bung, and vent
Zinc quick cold galvanizing	Plastic bottle; plastic-lined steel drum

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
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- NOTES:**
1. Wherever possible, the Department of Transportation-approved container used in the original issue of the material shall be reused. Container openings specified are for storage of those materials that are characteristically either liquid, semi-solid, or solid. Some materials (for example, silicone compounds) may appear in more than one state, depending upon usage. The choice of openings for containers used to hold those materials shall be made on a case-by-case basis.
  2. No standard container proposed. Containers may vary from 5- to 55-gallon drums to large bulk tanks.
  3. Bulk usage is probable in large scale operations.
  4. Typical shipboard portable wet-cell batteries vary widely in size. Accordingly, personnel shall match the size of the storage drums used to the size and number of batteries to be containerized. A standard 18 gauge, 55-gallon steel drum, for example, will accommodate, respectively, two BB259 batteries; four BB258 batteries; six BB257 batteries; or forty BB255 batteries. (Weight constraints, however, may also be a factor in determining the total number of batteries per container.) Batteries shall be stored right side up.
  5. Not otherwise specified.

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
Bag	8105-00-848-9631	Polyolefin, single wall, 5 mil, 36-in by 54-in, flat, wire tie	PPP-B-26 TY 2
Plastic bottle with screw cap closure <sup>3</sup>	8125-00-174-0852	Polyethylene, 1 gal, round	MIL-B-26701
	8125-00-731-6016	Polyethylene, 13 gal, round	Not available
	8125-00-888-7069	Polyethylene, 5 gal, round	Not available
Fiberboard box	8115-01-012-4597	Fiberboard, RSC style, 34-in by 26-in by 16-in, burst-strength 400 lb	DOT 2C PPP-B-636
Tin can with screw cap closure <sup>3</sup>	8110-00-879-7182	Tin, 1 gal, oblong, enamel outside surface treatment	DOT 2F PPP-C-96 TY 5 CL4
Steel can lined	8110-00-128-6819 <sup>4</sup>	Steel, 24 gauge, 1 gal, screw cap with neoprene liner closure, epoxy resin interior lining	DOT 17C
	8110-00-400-5748 <sup>4</sup>	Steel, 24 gauge, 5 gal, screw cap with neoprene liner closure, epoxy resin interior lining	DOT 17C PPP-P-704 TY 1 CL4, 11
Glass carboy	8125-00-598-9380	Glass, 5 gal, wood box overpack	MIL-C-17932 TY B
Steel drum with removable cover	8110-00-030-7780 <sup>4</sup>	Steel, 16 gauge, 55 gal, removable cover with lock ring, enamel outside surface treatment	DOT 17H
	8110-00-951-9728	Bolt ring set for 55 gal drum	None
	8110-00-823-8121	Steel, 18 gauge, 55 gal, removable cover with lock ring, enamel outside surface treatment	DOT 17H PPP-D-729 TY 4
	8110-01-101-4055	Hazardous material recovery, 85 gal, open head	None

Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
Steel drum with removable cover <sup>3</sup>	8110-00-866-1728	Steel, 18 gauge, 30.0 gal., removable cover with lock ring, enamel outside/inside surface treatment	None
	8110-01-016-7362	Bolt ring set for 30 gal. drum	None
	8110-00-082-2625	Steel, 18 gauge, 27 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-044-2984	Steel, 18 gauge, 20 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5716	Steel, 20 gauge, 12 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5715	Steel, 20 gauge, 9 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5713	Steel, 22 gauge, 6 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8810-01-254-5722	Steel, 22 gauge, 4 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-01-101-4056	Hazardous material recovery, 85 gal, open head	None
Steel drum with bung and vent <sup>3</sup>	8110-00-282-2520 <sup>4</sup>	Steel, 5 gal, enamel exterior treatment, spout	PPP-D-704 TY I CL 8
	8110-00-292-9783 <sup>4</sup>	Steel, 18 gauge, 55 gal, with bung and vent, enamel outside surface treatment	DOT 17E PPP-D-729 TY 2



Appendix C23-A

HAZARDOUS MATERIAL/HAZARDOUS WASTE CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
Steel drum with bung and vent <sup>3</sup>	8110-00-597-2353 <sup>4</sup>	Steel, 16 gauge, 55 gal, with bung and vent, paint exterior surface treatment	DOT 17E PPP-D-729
Plastic liner	8115-00-145-0038 <sup>4</sup>	Liner, polyethylene, 5 gal, to be used with 5-gal steel drum	
Plastic drum	Not available	Polyethylene, 5 or 55 gal, used to contain AFFF, reusable <sup>2</sup>	

- NOTES:**
1. DOT: Department of Transportation; Mil: Military; Fed: Federal.
  2. This type can be reused only if the drum:
    - a. Is in good condition.
    - b. Is triple rinsed and completely drained before reuse.
    - c. Is properly relabeled.
  3. Container openings specified are for storage of those materials that are characteristically either liquid, semi-solid, or solid. Some materials (for example, silicone compounds) may appear in more than one state, depending upon usage. The choice of openings for containers used to hold those materials shall be made on a case-by-case basis.
  4. EPA-approved container types for packaging liquid PCBs. Suitable containers that meet the DOT specifications: 5, 5B, 6D (with 2S or 2S polyethylene inserts), 17C, and 17E may be used as substitutes. PCBs should be packed in these approved containers with absorbent material such as standard absorbent sweeping compound, NSN 7930-00-209-1272, or Safestep, NSN 7930-01-145-5797 25 lb.

Appendix C23-B

Navy Used Hazardous Material Identification Label

**USED**

SHIP \_\_\_\_\_ WORK CENTER \_\_\_\_\_

NAME OF MATERIAL \_\_\_\_\_

PROCESS IN WHICH MATERIAL USED \_\_\_\_\_

\_\_\_\_\_

ANY KNOWN IMPURITIES \_\_\_\_\_

SPECIAL STOWAGE REQUIREMENTS \_\_\_\_\_

\_\_\_\_\_

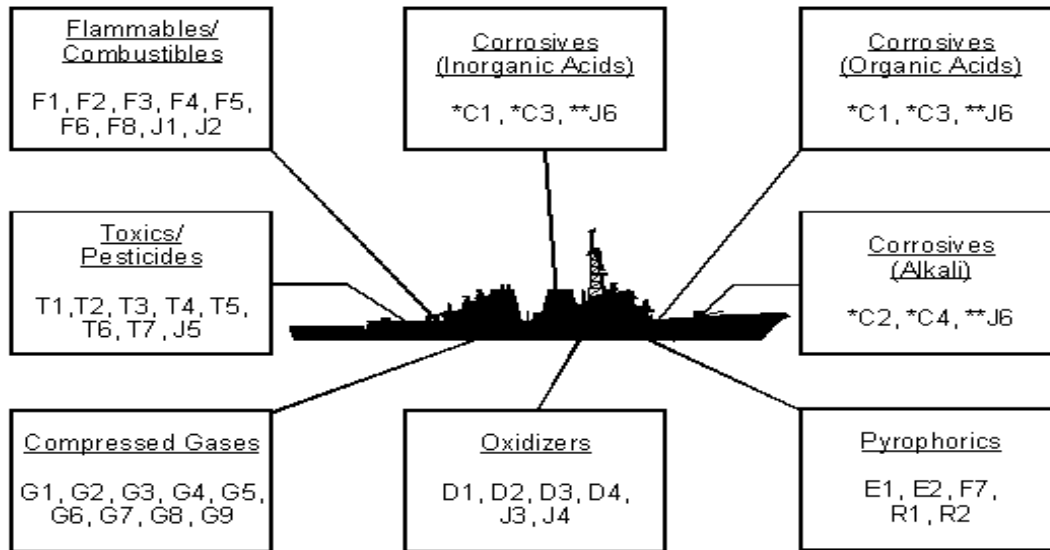
DIVISION OFF. SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**HAZARDOUS MATERIAL**

Appendix C23-C

**HAZARDOUS MATERIAL COMPATIBILITY STORAGE DIAGRAM  
(USING HMIS HAZARD CHARACTERISTIC CODE (HCC))**

The Hazardous Characteristic Code (HCC) for each SHML item can be found in the Hazardous Material Information System (HMIS). The HCC and their intended use are defined and explained in appendix C23-D.



Instructions:

1. Each block represents a separate stowage location. The codes in the boxes are grouped with other codes with which they are compatible for storage. Generally, materials with different codes will not be stowed together unless specified below:

a. Inorganic acids may be stowed in a flammable liquid storeroom inside a designated locker, separated by at least three feet from all other material.

b. Organic acids may be stowed in a flammable liquid storeroom inside a designated locker, separated by at least three feet from all other material.

NOTES:

\*C1, C3 - HM identified with the C1 or C3 code may be either an inorganic or an organic acid. See page C23-C-2 for examples of inorganic and organic acids.

\*\* J6 - HM identified with J6 may be an inorganic acid, organic acid, or alkali. See page C23-C-2 for examples of inorganic/organic acids and alkalis.

2. All aerosol containers shall be stowed as flammable material.

**Appendix C23-C**

**ACID AND ALKALI EXAMPLES**

The table below lists common examples of inorganic acid, organic acid, and alkali. Acids identified with the HCC code C1 or C3 may be either inorganic or organic, check carefully before storing. HM items with HCC code J6 may be an inorganic acid, an organic acid, or a alkali; check carefully before storing.

Inorganic acid (C1, C3, J6)	Organic acid (C1, C3, J6)	Alkali (C2, C4, J6)
Alodine Aqua fortis Boric acid Chromic acid Hydrochloric acid Hydrofluoric acid Muriatic acid Nitric acid Oil of Vitriol (sulfuric acid) Orthotolidine solution Phosphoric acid Sodium bisulfate Sulfamic acid Sulfuric acid	Acetic acid Citric acid Cresol Cresylic acid Glacial acetic acid Oxalic acid Sulfosalicylic acid Trichloroacetic acid Vinegar	Ammonia Ammonium hydroxide Barium hydroxide Calcium hydroxide Caustic soda Caustic potash Diethylenetriamine Lithium hydroxide Monoethanolamine Morpholine Potassium carbonate Potassium hydroxide Soda lime Sodium sulfide Sodium hydroxide Sodium metasilicate Sodium phosphate Sodium silicate Sodium hypochlorite Tetraethylenepentamine

Appendix C23-D

HMIS CODING AND STORAGE REQUIREMENTS

Table C23-D-1

HAZARD CHARACTERISTIC CODE  
FOR HAZARDOUS MATERIAL GROUPS

The Hazard Characteristic Code (HCC) is a two-digit alpha-numeric code that is used to provide a means of categorizing hazardous material (HM). HCCs are assigned by trained scientific or engineering personnel, thereby uniformly identifying HM that is managed by all government activities. HCCs allow personnel to properly receive, handle, store, and process HM. In particular, the HCC allows the user to determine which materials are compatible for storage with other materials. In addition, HCCs can be used to simplify spill response and cleanup, processing of HM during recoupment operations, and assist in the identification of potential hazardous wastes. The HCC serves as an identifier for automated processing of HM transactions and space utilization management.

<u>HAZARD GROUP</u>	<u>HCC</u>
1. Radioactive Materials	
a. Licensable	A1
b. Licensable, Low Risk (encapsulated sources)	A2
c. License Exempt	A3
d. License Exempt, Authorized	A4
2. Corrosive Liquids	
a. Corrosive, DOT, Acid	C1
b. Corrosive, DOT, Alkali	C2
c. Acid, Low Risk (2 < pH < 7)	C3
d. Alkali, Low Risk (7 < pH < 12.5)	C4
3. Oxidizers	
a. Oxidizer (explosive reaction or causes a severe increase in burning rate)	D1
b. Oxidizer, Low Risk (increases burning rate of combustibles)	D2
c. Oxidizer (HCC D1) and Poison (HCC T1, T2, T3, T4, T5, or T6)	D3
d. Oxidizer (HCC D1) and Corrosive (HCC C1 or C2)	D4
4. Explosives (See OP4, OP5, and OP2165)	
a. Explosives, Military	E1
b. Explosives, Low Risk (small hazard in event of ignition or initiation during transport)	E2

**Table C23-D-1 (Cont'd)**

<u>HAZARD GROUP</u>	<u>HCC</u>
5. Flammable/combustible liquids	
a. Flammable, Aerosol	F1
b. Flammable (flashpoint (fp) < 0°F)	F2
c. Flammable (0°F < fp < 73°F)	F3
d. Flammable (73°F < fp < 141°F)	F4
e. Flammable (HCCs F2, F3, or F4) and Poison (HCCs T1, T2, T3, T4, or T6)	F5
f. Flammable (HCCs F2, F3, or F4) and Corrosive (HCCs C1 or C2)	F6
g. Flammable solid (excludes explosives and HCCs R1 and R2)	F7
h. Combustible, Liquid (141°F < fp < 200°F)	F8
6. Compressed Gases	
a. Gas (Nonflammable) Poison	G1
b. Gas, Flammable, Non Toxic	G2
c. Gas, Nonflammable, Non Toxic	G3
d. Gas, Nonflammable, Oxidizer (requires oxidizer label)	G4
e. Gas, Nonflammable, Corrosive (C1 or C2)	G5
f. Gas, Nonflammable, Poison, Corrosive (C1 or C2)	G6
g. Gas, Nonflammable, Poison, Oxidizer	G7
h. Gas, Flammable, Poison	G8
i. Gas, Nonflammable, Poison, Corrosive, Oxidizer	G9
7. Miscellaneous Materials (present minimal hazard during transport or storage)	
a. Miscellaneous Flammable Materials	J1
b. Miscellaneous Flammable Solids	J2
c. Miscellaneous Oxidizing Materials	J3
d. Miscellaneous Organic Peroxides	J4
e. Miscellaneous Poisonous Materials	J5
f. Miscellaneous Corrosive Materials	J6
g. Miscellaneous Class 9 (anesthetic, noxious, or other similar properties which could cause discomfort to flight crews. Formerly called Irritants)	J7
h. Miscellaneous ORM-E (hazardous under CERCLA but not classed under other HCC)	J8
8. Medical Substances	
a. Infectious Materials (micro-organism or its toxin)	K1
b. Cytotoxic Drugs	K2

**Table C23-D-1 (Cont'd)**

<u>HAZARD GROUP</u>	<u>HCC</u>
9. Magnetized Material	M1
10. Nonhazardous (material which by chemical name may be perceived to be hazardous)	N1
11. Peroxides	
a. Peroxide, Organic (present deflagration, severe fire hazard, or fire hazard)	P1
b. Peroxide, Organic, Low Risk (burns as an ordinary combustible, but with minimal reactivity hazard)	P2
12. Reactive Chemicals	
a. Reactive Chemical, Flammable (spontaneously combustible)	R1
b. Water Reactive Chemical (spontaneously combustible when wet)	R2
13. Toxic Chemicals	
a. DOT Poison - Inhalation Hazard	T1
b. UN Poison, Packing Group I (Great Danger)	T2
c. UN Poison, Packing Group II (Medium Danger)	T3
d. Poison, Food Contaminant (Minor Danger)	T4
e. Pesticide, Low Risk	T5
f. Health Hazard (hazardous, not classified elsewhere)	T6
g. Carcinogen	T7
14. Marine Pollutant	W1

**Table C23-D-2**

**SHIPBOARD STORAGE COMPARTMENTS**

**HCC CODES**

C1, C3	ACID STOREROOM
C1, C3	ACID LOCKER (ORGANIC) - SPECIAL DESIGN LOCATED INSIDE FLAMMABLE LIQUID STOREROOM
C1, C3	ACID LOCKER (INORGANIC) - SPECIAL DESIGN LOCATED INSIDE FLAMMABLE LIQUID STOREROOM
C1, C3	ACID LOCKER (MEDICAL)
C1	STORAGE BATTERY SHOP (LEAD ACID)
C2, C4	BASES (ORGANIC) LOCKER - LOCATED WITHIN DRY GENERAL STORAGE
C2, C4	BASES (INORGANIC) LOCKER - LOCATED WITHIN DRY GENERAL STORAGE
C2, C4	STORAGE BATTERY SHOP (ALKALINE) OR AVIATION ALKALINE BATTERY SHOP
F1 thru F6, F8	ALCOHOL STOREROOM
F1 thru F6, F8	ALCOHOL LOCKER
F1 thru F6, F8	FLAMMABLE LIQUID LOCKER
F1 thru F6, F8	FLAMMABLE LIQUID CABINET
F1 thru F8	FLAMMABLE LIQUID STOREROOM
F1 thru F6, F8	FLAMMABLE LIQUID READY SERVICE STOREROOM
F1 thru F6, F8	FLAMMABLE LIQUID ISSUE ROOM
F1 thru F6, F8	AVIATION FLAMMABLE LIQUID READY ISSUE ROOM
F1 thru F6, F8	AVIATION PAINT AND FLAMMABLE LIQUID READY ISSUE ROOM
F1 thru F6, F8	AVIATION STOREROOM (FLAMMABLES)
F8	AVIATION STOREROOM (LUBRICANTS)



**Table C23-D-2** (Cont'd)

HCC CODES

F1 thru F6, F8	PAINT MIXING AND ISSUE ROOM/LOCKER
F1 thru F6, F8	PAINT AND REFINISHING ROOM
F1 thru F6, F8	SUPPLY DEPARTMENT STOREROOM (FLAMMABLE LIQUIDS)
F8	SUPPLY DEPARTMENT STOREROOM (AVIATION LUBRICATION OIL)
G3, G4	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (R
G8	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (ACETYLENE)
G2, G8	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (FLAMMABLE)
G1, G3	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (CO <sub>2</sub> AND HALON)
G3	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (HELIUM)
G4, G5	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (OXYGEN AND CHLORINE)
G3	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (INERT)
G3, G4	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (OXYGEN AND NITROGEN)
G2, G8	SUPPLY DEPARTMENT GAS CYLINDER STOREROOM (WEATHER STOWAGE)
C1, C3	CARGO STOREROOM (BULK ACID AND CHEMICAL)
F1 thru F8	CARGO STOREROOM (FLAMMABLE LIQUIDS)
G2, G8	CARGO STOREROOM (FLAMMABLE GAS CYLINDERS)
G3	CARGO STOREROOM (INERT GAS CYLINDERS)
F8	CARGO STOREROOM (LUBRICATING OIL)
J6	CARGO STOREROOM (DRY CELL BATTERY)
J1 thru J8	CARGO STOREROOM (MEDICAL SUPPLIES)

**Table B3-D-2** (Cont'd)

HCC CODES

GENERAL STORAGE AREAS

VARIOUS CODES; SUPPLY DEPARTMENT STOREROOMS (BULK) ITEMS STORED BY COMPATIBLE  
(including GROUP  
remainder of  
HCC Codes)

MISCELLANEOUS STORAGE COMPARTMENTS

D1 SUPPLY DEPARTMENT CALCIUM HYPOCHLORITE STOREROOM/LOCKER

F1 thru F6, F8, CLEANING GEAR LOCKER/ROOM  
C3, C4

D1 BROMINE FEEDER CARTRIDGE LOCKER

J6, T1 MERCURY LOCKER

J1 thru J8 POISON ANTIDOTE LOCKER

D1 SODIUM NITRATE LOCKER

J1 thru J8 MEDICAL LOCKER

D1 CHLORATE CANDLE LOCKER

F7 LITHIUM BATTERIES LOCKER

F1 thru F6, F8 PAINT LOCKER

F1 thru F6, F8 PAINT STOREROOM

A1 thru A4 RADIOACTIVE MATERIAL AREA (in accordance with NAVSUP Manual  
485, Afloat Supply Procedures and NAVSUP Manual 284, Storage  
and Materials Handling)

**SHIPBOARD STORAGE EXCEPTIONS**

1. **Materials not to be used or stored aboard ships.** The following materials are prohibited from use or storage aboard all ships except where authorized in medical department pharmacies, clinical and chemical laboratories, and as cargo.

Trichlorethylene (to be used only by ships having equipment designed for its use)  
Benzene (Benzol)  
Beta Naphthylamine  
Carbon Tetrachloride  
DDT Xylene Emulsion  
Hydrocyanic Gas  
Insecticides, DDT (prohibited items)  
Methyl Bromide  
Plastic Trash Cans  
Dry Cleaning Solvent (Stoddard Solvent) Type I of FED SPEC P-D-680  
Tetrachloroethane

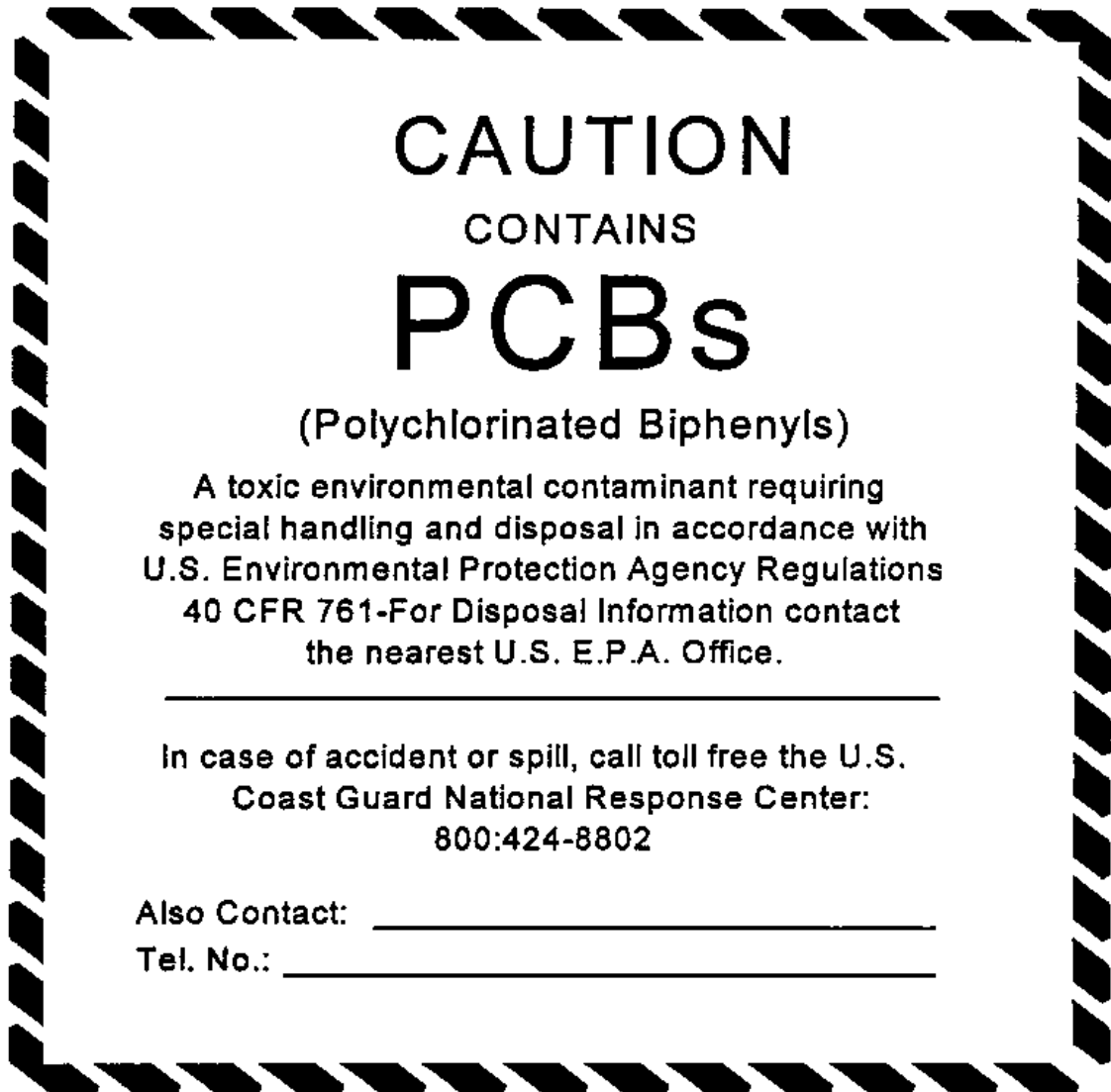
2. **Materials not to be stored aboard ships.** The following materials are prohibited from storage aboard ships.

Gasoline (except that carried topside in a suitable jettison rack)  
Sulfuric acid, electrolyte - storage batteries - class 1 minimum specific gravity 1.8354 (except for tenders that have fresh water deluge showers)

Appendix C23-E

PCB LABELS

Large PCB Label

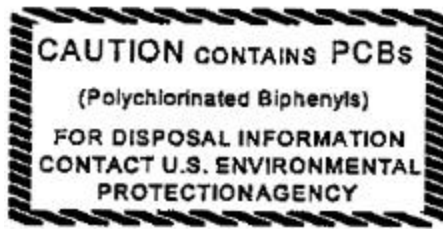


This label is available in the following sizes:

<u>Size</u>	<u>Stock Number</u>
6" X 6"	0116-LF-008-6500
4" X 4"	0116-LF-050-9021

OPNAVINST 5100.19C CH-2  
30 July 1999

Small PCB Label



This label is available in the following size:

<u>Size</u>	<u>Stock Number</u>
1" X 2"	0116-LF-050-9011

CHAPTER B3

HAZARDOUS MATERIAL CONTROL AND MANAGEMENT (HMC&M)

B0301. DISCUSSION

a. To attain and maintain operational effectiveness, Navy ships require specified types and quantities of hazardous material (HM). Great care must be taken in handling, using, and storing HM to prevent injury to personnel, damage to equipment, or harm to the environment. Risks associated with HM are greater aboard ship than ashore because of the limited number, confined nature, and "at sea" environment of shipboard spaces. Consequently, special precautions and an effective program to manage HM are both needed. The maintenance of safe and healthful working conditions for HM is a chain of command responsibility. Implementation begins with the commanding officer and extends to the individual sailor.

b. This chapter addresses general management requirements for HM. **Chapters C23 for surface ships and D15 for submarines contain specific management guidance and safety precautions** for the HM subcategories contained in the definition that follows. Commands having dental facilities shall refer to BUMEDINST 6260.30 for direction in implementing mercury control in affected spaces.

c. **For submarines.** This chapter and Chapter D15 provide guidance for all HM, including HM that contains atmosphere contaminants per reference B3-1. Some of these contaminants may be released to the submarine atmosphere during operations involving the use of the HM. When a HM is a source of submarine atmospheric contamination, Chapter D15 provides additional controls on the storage and use of this material.

d. The following definitions apply to Navy HMC&M:

(1) **Hazardous Material (HM).** Any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a substantial hazard to human health or the environment when incorrectly used, purposefully released, or accidentally spilled. Subcategories of HM, per reference B3-3 (Hazardous Material Users' Guide), include:

- (a) Acids
- (b) Adhesives
- (c) Alkalis/Bases/Caustics
- (d) Cleaning compounds
- (e) Compressed gases
- (f) Corrosion preventive compounds
- (g) Detergents/Soaps

- (h) Greases
- (i) Hydraulic fluids
- (j) Inspection penetrants
- (k) Lubricants/oils
- (l) Paints
- (m) Photo chemicals
- (n) Polish/Wax compounds
- (o) Solvents (Hydrocarbons)
- (p) Thermal insulation
- (q) Water treatment chemicals
- (r) Oxidizers
- (s) Fuels
- (t) Heavy metals
- (u) Batteries
- (v) Pesticides

Not included in this definition are ammunition, weapons, explosives, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, pharmaceutical supplies (if not considered hazardous based on composition, physical form, and review of procedures which may involve the handling/dispensing of the materials), medical waste and infectious materials, bulk fuels, and radioactive materials. Even though the above items may not be considered HM, submarine atmosphere control requirements in chapter D15 may apply. Asbestos and lead require special guidance for handling and control, which are addressed in Chapter B1 and B10 respectively.

(2) **Hazardous Waste (HW)**. Any discarded material (liquid, solid, or gas) which meets the definition of HM and/or is designated as a hazardous waste by the Environmental Protection Agency or a State authority.

**NOTE:**

The Federal Facilities Compliance Act of 1992 states that any HW aboard an operational Navy ship is not subject to the storage, manifest, inspection, or recordkeeping requirements of the Resource Conservation and Recovery Act unless such waste is transferred to the ship within territorial waters of the U.S. and is stored on that ship for more than 90 days.

(3) Used or Excess Hazardous Material (Used/Excess HM). HM for which there is no further, immediate use on board the ship possessing the material. Used HM is material that has been used in a shipboard process. Excess HM is unused material in full, properly sealed containers. Such material may ultimately be used on another ship, within the shore establishment, for a purpose other than that for which it was initially manufactured, or by commercial industry. Ships are required to transfer used or excess HM to a Navy shore activity for determination of suitability for further use. Navy shore activities possess trained personnel who can determine, working with ship's personnel, whether shipboard HM is usable, reusable, or should be disposed of as HW. The shore activity will act as the HW generator if it determines that the material has no further use and dispose of it as required by Federal, state, and local regulations.

**B0302. SURFACE SHIP HMC&M**

**a. Responsibilities**

**(1) The commanding officer shall:**

(a) Report to the Fleet Commanders by message, information to the chain of command, any conditions or system/equipment malfunctions that results in an overboard discharge of HM within restricted waters per reference B3-1 and applicable Operations Orders (OPORDs).

(b) Appoint a commissioned officer within the Supply Department as HM coordinator. On surface ships smaller than a frigate, appoint a commissioned officer as HM coordinator. Ships and afloat activities specifically designated by the type commander in which the number of assigned officers is limited and appointment would pose an excessive burden to the ship may assign a chief or leading petty officer as HM coordinator.

**(2) Division officers shall:**

(a) Ensure that NAVSEA-approved, in-space storage lockers are used.

(b) Ensure that HM retained within their workcenters is specific to the operations and maintenance of assigned equipment. If a HAZMINCEN is in operation, no more than a 7-day supply of common-use HM may be retained in workcenter spaces.

(c) Ensure used or excess HM is properly returned to the HM supervisor/HAZMINCEN.

(d) Ensure that approved personal protective clothing and equipment are available for HM operations or incidents and personnel are trained in their proper use and maintenance.

(e) Make personnel available to receive required HM training as detailed in section B0302e.

(f) Mark any PCB-containing electrical or electronic components per reference B3-3 and associated NAVSEASYSCOM-issued PCB advisories.

(3) The safety officer shall report all HM mishaps as required by Chapter A6.



(4) The afloat environmental protection coordinator (AEPC) shall perform the functions described in reference B3-2.

(5) The damage control assistant shall:

(a) Implement a spill contingency plan (SCP) per paragraph B0302c.

(b) Train and supervise ship's damage control teams (and fire department, if used aboard) in combating spills of HM.

(c) Provide training to divisions regarding reporting, initial handling, and cleanup of HM spills, as requested.

(d) Maintain the Hazardous Material Spill Response Kits (AEL 2-550024007).

(e) Ensure that HM spills are handled per appendix B3-A.

(6) The supply officer/HM coordinator shall:

(a) Ensure a Material Safety Data Sheet (MSDS) is on file (either hard copy or on CD-ROM) for all types and brands of HM taken aboard. Ensure that hard-copy MSDSs are readily accessible to personnel and their supervisors.

(b) If an O-4 or below, obtain commanding officer's (or designated O-5's) written authorization prior to open purchasing any HM.

(7) The HM supervisor shall:

(a) Provide control and inventory management of designated ship's HM. For ships FFG and larger, manage the operation of the ship's HM minimization center (HAZMINCEN).

(b) Maintain the Hazardous Material Information System (HMIS) which contains MSDS information (see paragraph B0302d(2)). Retain hard copy MSDSs for locally purchased material and for materials not covered in the HMIS. Forward copies of MSDSs which are not on this system to: Commanding Officer, Navy Environmental Health Center, Attn: HMIS (Code 341), 2510 Walmer Avenue, Norfolk, VA 23513-2617.

(c) Ensure receipt and consolidation (as appropriate) of all used HM. Supervise document preparation for offload of used/excess HM. Prior to the ship getting underway, ensure that no HM remains on the pier.

(d) Ensure personnel assigned to the HAZMINCEN (HAZMINCEN operator(s)) are trained on duties and responsibilities prior to assuming these duties.

(e) Ensure that when HM is transferred into other containers, the new containers are properly marked with the information specified in paragraph C2302e. The requirement to transfer HM into other containers shall be limited to HM which is specific to the division. Where possible, HM shall be obtained from the HAZMINCEN in containers sized to the user's need.

(8) The MDR shall:

(a) Assist the HM supervisor and work center supervisors in training personnel regarding health information and personal protective equipment requirements for the HM they are using.

(b) Maintain a complete MSDS file. This may be HMIS on CD-ROM or hardcopy.

(9) Division supply petty officers (when there is no HAZMINCEN aboard or for HM specific to the division) shall order only authorized material. Standard stock HM shall be used whenever possible to avoid procurement of open purchased HM.

(10) Workcenter supervisors shall:

(a) Ensure that approved personal protective clothing and equipment are maintained and used.

(b) Ensure that prior to initial use or handling any HM, workcenter personnel have been trained on the hazards associated with that material and are familiar with what an MSDS is, what it contains, and where a copy is available for review. Learning resources for this training are available at <http://www.norva.navy.mil/navosh>.

(11) All hands shall:

(a) Return HM to approved stowage or the HAZMINCEN upon completion of use or at the end of the workday.

(b) Properly use and handle HM.

(c) Collect and segregate any residue resulting from use of HM for turn-in to the supply department/HAZMINCEN.

(d) Report any spills of HM to the officer of the deck, and/or Damage Control Central/Central Control Station.

(e) Properly stow or return to the HAZMINCEN/supply department any HM found improperly stowed in work or berthing spaces.

(f) Report any violation of HM use, storage, and handling precautions to the supervisor.

(g) Ensure that when HM is transferred into other containers, the new containers are properly marked with the information specified in paragraph C2302e. The requirement to transfer HM into other containers shall be limited to HM specific to the division. Where possible, HM shall be obtained from the HAZMINCEN in containers sized to the user's need.

b. Hazardous Material Control and Management Elements. The following elements are essential for effective surface ship HM control and management:

(1) Designation of adequate storage for HM (see chapter C23)

(2) Controlling HM purchase (including type and quantity of material required), receipt, and issue to avoid accumulation of excessive HM (see chapter C23)

(3) Following approved safety standards for the use of HM (see chap-

ters B1, B8, B10, and C23 for specific HM use requirements)

(4) Reutilization of HM to reduce the amount of used HM generated (see chapter C23)

(5) Collecting, segregating, and disposing of used or excess HM (see chapter C23)

(6) Responding to HM emergencies (see B0302c)

(7) Obtaining and providing MSDSs for on board HM (see chapter C23)

(8) Training (see B0302e)

(9) Proper labeling of HM (see chapter C23).

c. **HM Emergency Response.** The DCA shall use Appendices B3-A and B3-B as HM spill response procedures in preparation for possible HM spills or releases to the environment. These plans include information on spill response team makeup, spill cleanup equipment location, internal and external spill reporting criteria, as well as procedures that are unique to the ship. Reporting requirements for a HM spill which goes over the side are found in reference B3-2, Chapter 19. Appendix B3-B is specific to mercury.

d. **HM Information**

(1) **MSDS.** MSDSs are technical bulletins containing information about materials, such as composition, chemical, and physical characteristics, health and safety hazards, and precautions for safe handling and use. MSDSs shall be maintained for every item of HM aboard either through the HMIS (see paragraph B0302d(2)) or by hard copy for open purchased items. They shall be readily accessible to supervisors and personnel who actually use or handle HM. Supervisors are required to provide instruction in MSDS understanding and use. All personnel using HM shall be trained on the dangers and precautions contained within the MSDS before they actually use those materials.

(2) **Hazardous Material Control and Management (HMC&M) Compact Disc-Read Only Memory (CD-ROM).** The HMC&M CD-ROM is a Navy data application which contains the HMIS, Hazardous Material User's Guide (HMUG), Ships' Hazardous Material List (SHML), and the Shipboard Safety Equipment Shopping Guide. The HMIS is a compilation of MSDS data applicable to DOD. If a MSDS is not available for material provided to the ship for use, the HMIS shall be scanned to determine if such data are resident within it. Chapter C23 contains storage requirements and coding found on some items listed in HMIS. The HM supervisor shall maintain the HMIS. Ensure that only the most current version is used.

(3) **Hazardous Material User's Guide (OPNAV Publication P-45-110-91, NSN (0420-LP-181-6600)).** The Hazardous Material Users' Guide (HMUG) is a publication which provides the fleet with easily understandable safety and health information to supplement the technical data found in MSDSs. The information in this guide is designed to assist HM users in protecting themselves and the environment. The contents of the guide include control measures, precautions, health hazards, spill control guidance, and disposal guidelines for 22 HM groups. It also provides a personal protective equipment shopping guide. The guide should be readily available and used in every workcenter. Applicable sections can be copied and posted in areas where specific HM groups are frequently handled or stored.

(4) Shipboard Safety Equipment Shopping Guide (NAVSAFECEN Publication). This publication consolidates standard stock numbers for safety equipment and personal protective equipment.

(5) Federal Logistics Data on Compact Disc (FEDLOG). This disc contains the Management List, Navy (MLN), which includes additional information on HM. The Special Material Content Code (SMCC) for NSNs used by the Navy can be found in the Management Control (MGT CTL) field. The SMCC Code is in the seventh position of that field.

(6) Hazardous Material Inventory Control System (HICS). HICS is a menu-driven inventory control system. It assists the operator in the systematic, positive control and issue of hazardous material. It has the following capabilities:

- (a) Prints bar-code control numbers for each item of HM issued.
- (b) Lists master HM inventory by type and location for use in determining HM on hand.
- (c) Tracks HM usage and containers issued to the department, division, workcenter, or individual level.
- (d) Produces receipts, inventory reports, and other customized reports.
- (e) Tracks inventory high and low stock level limits.
- (f) In conjunction with a scanner, allows remote site recording/tracking of returned containers or site inventory.

(7) CNO Policy Guide for Shipboard Hazardous Material Container Disposal (OPNAV Publication P-45-114-95). This publication provides guidance on the disposal of containers that formerly held HM. The guidance document provides a simple decision flow chart to assist the user in rapidly determining whether a HM container is an "empty container" and if it is, whether it may be disposed of as trash or as used HM.

e. HM Training

(1) The HM coordinator shall normally receive en route training at the Navy Supply Corps School Basic and Department Head Courses. HM coordinators who are not Supply Corps officers shall attend the Afloat HM Coordinator Course (A-8B-0008) taught by the Naval Occupational Safety and Health and Environmental Training Center (NAVOSHENVTRACEN). The course shall be completed prior to, or within 6 months of, being assigned this duty.

(2) The HM supervisor shall be a graduate of the HMC&M Technician (SNEC 9595) course (A-322-2600). If the ship has a HAZMINCEN, at a minimum the HM supervisor shall also be a graduate of the CHRIMP/HICS Technician course. Both courses are taught by the NAVOSHENVTRACEN.

(3) Damage control teams required to combat an emergency involving HM, and the ship's fire department (if used aboard) shall receive training on HM emergency procedures. The damage control assistant shall ensure that at least one spill response drill is conducted every 18 months.

(4) Audiovisual materials applicable to HM can be found in appendix

A7-F.

**B0303. SUBMARINE HMC&M**

**a. Responsibilities**

**(1) The commanding officer shall:**

(a) Report all HM mishaps as required by Chapter A6.

(b) Report to the Fleet Commanders by message, information to the chain of command, any conditions or system/equipment malfunctions that results in an overboard discharge of HM within restricted waters per reference B3-2 and applicable Operations Orders (OPORDs).

(c) Ensure that spills of HM are handled per the Ships System Manual (SSM) Toxic Gas Bill.

**(2) The executive officer shall:**

(a) Grant written permission to carry or use on board any restricted HM during an underway period. Refer to chapter D15 and reference B3-1 for definitions of submarine material control usage categories.

(b) Ensure assigned personnel follow the conditions under which restricted or limited HM are stored or used on board to minimize the release (off-gassing, mists, or vapors) of potential atmospheric contaminants into the submarine.

(c) Review the Submarine Material Control Log prior to each underway operation of 24 hours or greater, conducted in the recirculation mode, to ensure that restricted (R) items have been removed from the submarine.

**(3) Department heads shall:**

(a) Ensure that HM retained within their work centers is unique to the operations and maintenance of assigned equipment and does not exceed the quantity needed to satisfy operational requirements.

(b) Ensure used or excess HM is properly returned to the supply officer for turn over to the shore activity.

(c) Report items found with a restricted, limited, or prohibited (X) use code (not in the Submarine Material Control Log) to the supply officer for logging, labeling, assignment of approved storage location, or disposal.

(d) Obtain written permission from the executive officer to retain on board or use restricted items during underway operations.

(e) Ensure that restricted items authorized for in port use only are removed from the submarine as soon as the need for them no longer exists. Inform the Supply Officer of their removal to allow documentation in the Submarine Material Control Log.

(f) Ensure that all HM in their custody are used, handled, and stowed per the requirements of Chapter D15.

**(4) The supply officer/HM coordinator shall:**

(a) Ensure that management of shipboard HM follows procedures outlined in this chapter and Chapter D15.

(b) Ensure an MSDS is on file (either hard copy or on CD-ROM) for all types and brands of HM taken aboard. Ensure that hard-copy MSDSs are readily accessible to personnel and their supervisors. Maintain the HMIS and SMCL which contains MSDS information (see paragraph B0303d(1)).

(c) Ensure no prohibited HM is brought on board.

(d) Maintain the Submarine Material Control Log per paragraph D1502d.

(e) Ensure all HM brought on board is authorized for storage and use onboard by the Submarine Material Control List (SMCL). Affix an Atmosphere Contaminant Label for any material that is a restricted or limited HM.

(f) Initiate an investigation of any item suspected of being an atmosphere contaminant per the procedures of reference B3-1 and submit a SMCL feedback report per chapter D-15.

(g) Ensure that all restricted (R) and limited (L) items are inventoried every six months or prior to a change of command.

(h) Review the Submarine Material Control Log weekly in port and monthly underway.

(i) Obtain commanding officer's written authorization prior to open purchasing any HM.

(5) **The MDR shall:**

(a) Assist work center supervisors in training personnel regarding health information and personal protective equipment requirements for the HM they are using.

(b) Provide medical assistance in the event of a HM spill or mishap involving HM. Use MSDS information in SMCL provided by supply officer.

(6) **Division officers shall:**

(a) Ensure when HM is transferred into other containers the new containers are properly marked with the information specified in paragraph D1502d.

(b) Ensure approved personal protective clothing and equipment are available for HM operations or incidents and personnel are trained in their proper use and maintenance.

(c) Ensure personnel are made available to receive required HM training as detailed in section B0303e.

(d) Mark any PCB-containing electrical or electronic components per chapter D15.

(7) **The damage control assistant shall:**

(a) Train and supervise ship's damage control efforts to combat HM spills. Conduct HM spill response drills as necessary.

(b) Provide training to divisions regarding reporting, initial handling, and cleanup of HM spills, as requested.

(c) Maintain an OTTO FUEL spill kit (AEL A006350027) to respond to HM emergencies.

(8) Repair parts petty officers shall ensure before HM is ordered, that a valid requirement (specifically required by a maintenance procedure or other shipboard operation) exists. Standard stock HM shall be used whenever possible to avoid procurement of open purchased HM.

(9) Workcenter supervisors shall:

(a) Ensure that approved personal protective clothing and equipment are maintained and utilized.

(b) Ensure that prior to using or handling any HM, workcenter personnel have been trained on the hazards associated with that material and are familiar with what an MSDS is, what it contains, and where a copy is available for review.

(c) Ensure that a valid maintenance requirement exists for any HM item not listed in the SMCL and initiate a SMCL feedback report.

(10) All hands shall:

(a) Ensure that HM is returned to appropriate stowage upon completion of use or at the end of the workday, whichever is earlier.

(b) Follow instructions provided for the proper use of HM.

(c) Collect and segregate any used HM for proper offload per chapter D15.

(d) Report any spills of HM to the duty officer (in port) or the chief of the watch (underway).

(e) Report any violation of HM use, storage, and handling precautions to the supervisor for resolution/correction.

(f) Be alert to prevent the onboard storage and use of restricted material during underway operations without prior approval/authorization from XO. Ensure limited material is being used per SMCL guidance.

b. Hazardous Material Control and Management Elements. The following elements are essential for effective submarine HM control and management:

(1) Proper use of HM per SMCL guidance (see chapter D15)

(2) Designation of adequate storage for HM (see chapter D15)

(3) Controlling HM purchase (including type and quantity of material required), receipt, and issue to avoid accumulation of excessive HM (see chapter D15)

- (4) Avoiding open purchases of HM (see chapter D15)
- (5) Following approved safety standards for the use of HM (see chapters B1, B8, and D15 for specific requirements on use of HM)
- (6) Reutilization of HM to reduce the amount of used HM generated (see chapter D15)
- (7) Collection, segregation, and disposal of used or excess HM (see chapter D15)
- (8) Responding to HM emergencies (see B0303c)
- (9) Obtaining and providing MSDSs for on board HM (see chapter D15)
- (10) Training (see B0303e)
- (11) Proper HM labeling (see chapter D15)

c. **HM Emergency Response.** Hazardous material emergency response shall be conducted per the Toxic Gas Bill. The DCA shall follow the Toxic Gas Bill in preparation for possible HM spills or releases to the environment. Reporting requirements for a HM spill which goes over the side are found in reference B3-2, Chapter 19.

d. **HM Information**

(1) **MSDS.** MSDSs are technical bulletins containing information about materials, such as composition, chemical, and physical characteristics, health and safety hazards, and precautions for safe handling and use. MSDSs shall be maintained for every HM item aboard either through the SMCL (see paragraph B0303d(4)) or by hard copy for open purchased items. They shall be readily accessible to supervisors and personnel who actually use or handle HM. Supervisors are required to provide instruction in MSDS understanding and use. All personnel using HM shall be trained on the dangers and precautions contained within the MSDS before they actually use those materials.

(2) **Hazardous Material Control and Management (HMC&M) Compact Disc-Read Only Memory (CD-ROM).** The HMC&M CD-ROM is a Navy data application which contains the HMIS, Hazardous Material User's Guide (HMUG), SHML, and the Shipboard Safety Equipment Shopping Guide. The HMIS is a compilation of MSDS data applicable to DOD. If a MSDS is not available for material provided to the ship for use, the HMIS shall be scanned to determine if such data are resident within it. The supply officer shall maintain the HMIS. Ensure that only the most current version is used.

(3) **Hazardous Material User's Guide (OPNAV Publication P-45-110-91, NSN (0420-LP-181-6600)).** The HMUG is a publication that provides the ships with understandable safety and health information to supplement the technical data found in MSDSs. The information in this guide is designed to assist HM users in protecting themselves and the environment. The contents of the guide include control measures, precautions, health hazards, spill control guidance, and disposal guidelines for 22 HM groups. It also provides a personal protective equipment shopping guide. The guide should be readily available and used in every workcenter. Applicable sections can be copied and posted in areas where specific HM groups are frequently handled or stored.

(4) **CNO Policy Guide for Shipboard Hazardous Material Container Dis-**



**posal (OPNAV Publication P-45-114-95)**. This publication provides guidance on the disposal of containers that formerly held HM. The guidance document provides a simple decision flow chart to assist the user in rapidly determining whether a HM container is an "empty container" and if it is, whether it may be disposed of as trash or as used HM.

(5) **The Submarine Material Control List (SMCL)**. The SMCL is a Navy data application that lists the authorized HM for use on submarines as established by reference B3-1.

e. **Training**

(1) The HM coordinator receives en route training at the Navy Supply Corps School Basic Course.

(2) The leading SK shall be a graduate of the HMC&M Technician (SNEC 9595) course (A-322-2600).

(3) Personnel expected to combat an emergency involving HM shall receive training on HM emergency procedures.

(4) Audiovisual materials applicable to HM can be found in appendix A7-F.

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**CHAPTER B3**

**REFERENCES**

- |      |  |
|------|--|
| B3-1 | NAVSEA Manual S9510-AB-ATM-010(U), Nuclear Submarine Atmosphere Control Manual (NOTAL) |
| B3-2 | OPNAVINST 5090.1B, Environmental and Natural Resources Program Manual (NOTAL)          |
| B3-3 | NAVSEA S593-A1-MAN-010, Shipboard Management Guide to PCBs (NOTAL)                     |

**Appendix B3-A**

**HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES (SURFACE SHIPS ONLY)**

1. **Introduction.** Because of the extremely hazardous nature of many materials used aboard ships, only trained personnel shall respond to a hazardous material (HM) spill. Personnel shall be trained by division officers or supervisory personnel to clean up small spills of HM. Appropriate Material Safety Data Sheets (MSDSs) shall be used to conduct training.

Response procedures for many specific situations are provided in other documents. See Naval Warfare Publication (NWP) 62-1, Surface Ship Survivability for repair party responsibilities. See Naval Ships Technical Manual (NSTM) 555 for shipboard HM fire fighting procedures; NSTM Chapter 079, Volume 2 for HM damage control procedures; and NSTM Chapter 077 for personal protective equipment guidance. See NAVAIR 00-80-R-14 for aircraft HM fire fighting procedures. These spill procedures apply to on board HM spills. Response for HM and oil spills over-the-side is contained in reference B3-2.

For descriptive purposes, the spill response procedures have been divided into nine phases:

- a. Discovery and Notification.
- b. Initiation of Action.
- c. Evaluation.
- d. Containment and Damage Control.
- e. Dispersion of Gases/Vapors.
- f. Cleanup and Decontamination.
- g. Disposal of Contaminated Materials.
- h. Certification for Re-entry.
- i. Follow-up Reports.

Each response phase is **not** a separate response action entirely independent of all other phases. Several phases may occur simultaneously and may involve common elements in their operation. For example, containment and damage control may also involve cleanup and disposal techniques.

2. **Spill Discovery and Notification**

a. Spills or potential spills of HM may be discovered by regularly scheduled inspections of storerooms and workshops, by detection devices such as fire alarms and oxygen deficiency detectors, and during routine operations. All discoveries of spills or situations that may lead to a spill must be verbally reported **immediately** to supervisory personnel and the officer of the deck (OOD)/command duty officer (CDO). Crewmembers are **not** to remain in the area to investigate the spill. Whenever possible, however, the discoverer /initial response team shall report the following information:

Appendix B3-A

Enclosure (1)

- (1) Time of spill discovery.
- (2) Location of spill.
- (3) Identification of spilled material.
- (4) Behavior of material (reactions observed).
- (5) Source of spill (e.g., tank or container).
- (6) Personnel in vicinity of spill (list by name and department).
- (7) Volume of spill.
- (8) Anticipated movement of spill (e.g., leakage to lower deck passage from amidships toward galley).
- (9) Labeling or placarding information (copy data from spilled container only after exposure to spill is eliminated).

b. Overboard spills of reportable quantities of HM shall be reported per reference B3-2.

3. **Initiation of Action.** Coordination and direction of spill response efforts at the scene of an HM spill shall be accomplished by the ship's OOD, CDO, fire chief, damage control party leader, or senior person at the scene, as appropriate, who shall initiate the following actions:

- a. Evacuate all personnel from areas that may be exposed to the spilled material.
- b. Cordon off the affected area.
- c. Arrange first aid for injured personnel.

**CAUTION:**

**Do not enter the contaminated area until the necessary protective clothing and equipment have been determined.**

- d. Establish a command post and communications network.
- e. Prevent spills from entering other compartments by any means that do not involve personnel exposure to the spill, such as closing drains, ventilation ducts, doors, and hatches.
- f. Disperse gases or vapors to weather using blow-out (forced exhaust) ventilation or by natural ventilation such as opening doors or hatches. If atmosphere is suspected to be flammable or explosive, only explosion-proof fans shall be used for blow-out ventilation.
- g. Eliminate any fire or explosion hazards such as electrical equipment, incompatible materials, and open flames.

4. **Evaluation.** Proper evaluation of a spill can prevent fires, explosions,

personal injury, or permit steps to lessen their impact. This evaluation consists of the following three steps:

a. Obtain as much of the following information as possible from container labels and MSDS before starting response actions:

- (1) Type and concentration of the spilled material.
- (2) Hazardous characteristics of the spilled material, such as:
  - (a) Flash Point
  - (b) Toxicity
  - (c) Corrosiveness
  - (d) Potentially incompatible substances
  - (e) Effects resulting from exposure (fainting, dizziness, skin or eye irritation, nausea)
  - (f) First aid measures for exposure

b. Determine dangerous conditions or potential consequences of the spill, including:

- (1) Fire or explosion.
- (2) Presence of oxygen-deficient atmosphere in compartment.
- (3) Presence of toxic or explosive gases.
- (4) Possibility of dangerous vapors being drawn into ship's ventilating system.
- (5) Other HM in the compartment that would play a role in a fire or explosion or is incompatible with the spilled material.

c. Determine from the MSDS the appropriate spill response equipment and protective clothing necessary for safe and effective response.

5. **Containment and Damage Control**. Actions taken during this phase are directed toward controlling the immediate spread of the spill and minimizing the impact to the ship and crew. Depending on the type of spill, some or all of the following procedures may be employed:

a. Fight fire (if any), being careful to use fire fighting methods compatible with the material involved. Fire fighting procedures are provided in NSTM Chapter 555, "Fire Fighting, Ships."

b. Shut off or otherwise stem the spill at its source, whenever feasible, by:

- (1) Replacing leaking containers.
- (2) Plugging leaks in tanks.

(3) Emptying tank of remaining contents.

(4) Encapsulating a leaking container into a larger, liquid-tight container.

(5) Segregating leaking containers.

c. Predict spill movement and take further action to prevent the spill from possibly entering other compartments by closing scuppers, drains, ventilation ducts, doors, or hatches.

d. Contain liquid material using barriers, such as sand, upholstery, sorbents, or other equipment suitable to dam the flow.

6. **Dispersion of Gas/Vapor.** If a flammable gas or vapor is released as a result of the spill, the gas/vapor shall be dispersed or diluted as soon as possible. The gas/vapor shall not be allowed to enter other compartments. In some cases, the explosive atmosphere shall be contained and diluted to lower its concentration below the Lower Explosive Limit (LEL). Have the gas free engineer check the spill area for LEL and toxicity. The atmosphere can then be dispersed by one of the following methods:

a. Normal exhaust ventilation (explosion-proof only).

b. Blow-out ventilation (powerful exhaust ventilation provided in some HM storerooms--explosion-proof only).

c. Doors and hatches open to the weather.

d. Portable fans (explosion-proof only).

7. **Cleanup and Decontamination.** During this response phase, personnel, as directed by the person in charge, shall employ the spill cleanup methods recommended on the MSDS or, in the case of a mercury spill, those outlined in Appendix B3-B. All surfaces shall be thoroughly cleaned of the spilled material. After the spill cleanup, the compartment shall be thoroughly ventilated. Reusable protective clothing shall be thoroughly decontaminated and otherwise maintained before it is returned to its proper storage location.

**NOTE:**

Identification of specific requirements for respiratory protection and proper use of this equipment is a critical aspect of all cleanup and decontamination operations.

8. **Disposal of Contaminated Materials.** All non-reusable cleanup materials are to be placed in impermeable containers, stored and disposed of as hazardous waste per appendix L of reference B3-2. These materials include unrecoverable protective clothing, sorbents, rags, brooms, and containers.

9. **Certification for Safe Re-Entry.** The spaces affected by the spill shall be certified safe by the OOD/CDO before normal shipboard operations are resumed in that space. The OOD/CDO shall ascertain the following before al-

lowing re-entry:

a. All surfaces--deck, counters, bulkheads, and overheads--have been thoroughly cleaned of the spilled material.

b. All compartments have been adequately ventilated as determined from analysis by the gas free engineer.

c. All contaminated cleanup materials, including protective clothing, have been packaged, marked and handled as used HM.

10. **Follow-up Reports**. The OOD/CDO shall submit to the HM coordinator a spill report for all on board spills. A copy of this report shall be filed by the safety officer and shall contain the following information:

a. Date spill occurred.

b. Spill location.

c. Identity of spilled material.

d. Cause(s) of spill.

e. Damage or injuries resulting from the spill.

f. Response and cleanup measures taken.

g. Any problems encountered.

h. Method of disposing of contaminated material.

i. Action taken to prevent the repeat of a similar spill.

**Appendix B3-B**

**MERCURY SPILL RESPONSE AND CLEANUP PROCEDURES (SURFACE SHIPS ONLY)**

1. **Mercury Spill Cleanup Procedures.** Procedures shall vary according to the size and complexity of the spill.

a. **Broken Fluorescent Bulbs**

- (1) Set up local exhaust ventilation.
- (2) Carefully sweep up bulb debris and double bag for disposal as HM.
- (3) Clean the area with a solution of HgX decontaminant from mercury spill kit.

b. **Small Spills:** Clean mercury spills with 50 grams (3/4 teaspoon or quarter size) or less immediately as follows:

- (1) If spill is in a confined area, set up local exhaust ventilation. If ventilation cannot be provided, a suitable respirator should be worn.
- (2) Spill cleanup personnel shall not eat, drink, smoke or apply cosmetics in spill area. They shall wash thoroughly with soap and water after cleanup.
- (3) Apply absorbent material from mercury spill kit to spilled mercury and dispose as HM.
- (4) Wipe down spill area with HgX solution from spill kit.
- (5) Discard any contaminated materials and protective clothing and dispose as HM.

c. **Large Spills:** Clean mercury spills of more than 50 grams (3/4 teaspoon or quarter size) immediately as follows:

- (1) Stop work operations in the area.
- (2) Warn personnel of the spill and its location, evacuate the area and establish safe boundaries.
- (3) Call the mercury spill team.
- (4) Use a mercury vapor meter to determine mercury vapor and degree of hazard, if possible.
- (5) Apply absorbent material from mercury spill kit to spilled mercury and dispose as HM.
- (6) Wipe down spill area with HgX solution from spill kit.
- (7) Discard any contaminated materials and protective clothing and dispose as HM.
- (8) Use a mercury vapor meter to detect any residual mercury. Reclean

with HgX if mercury vapor concentration exceeds 0.05 mg/m3.

(9) Use the mercury vapor meter after 24 hours to determine mercury vapor concentration. An allowable concentration of <0.01 mg/m3 must be attained in any space to be continually occupied by an individual for 8 or more hours daily.

2. **Mercury Waste Disposal.** Mercury is an environmental pollutant and must not be discharged into any body of water or released into any ship's waste disposal system. Disposal should be coordinated with the HM Coordinator and shore facility.



## CHAPTER D15

### SUBMARINE HAZARDOUS MATERIAL CONTROL AND MANAGEMENT STANDARDS

#### D1501. DISCUSSION

a. Submarine hazardous material control and management (HMC&M) standards address the storage, use, and disposal of all hazardous material (HM). In addition, these standards also provide more stringent control and management guidance for HM since they may be atmosphere contaminants. The breathing of fumes, vapors, or gases from these materials may severely impact the health and safety of submariners and submarine equipment.

b. This chapter provides the detailed guidance that submariners need to properly manage and control HM. It supplements the information contained in Chapter B3, specifically addressing submarine HMC&M processes.

c. Special precautions are required for the stowage, handling, and use of HM aboard submarines. Significant hazards include fire, poisoning by breathing toxic substances in unventilated spaces, dermatitis, asphyxiation, and burns of the skin and eyes. Some materials normally thought to be safe may become hazardous under certain use or storage conditions. This chapter contains general stowage and use standards for all HM, precautions for subcategories of HM (flammable materials, toxic materials, corrosive materials, oxidizers, aerosol containers, and compressed gases) and specific precautions for certain selected materials. Chapter B3 provides information on HM spill response and training.

#### D1502. GENERAL HMC&M STANDARDS

a. **HM Allowed Aboard Submarines.** Only HM listed in the Submarine Material Control List (SMCL) CD-ROM is allowed aboard submarines. The SMCL is the authorized use list (AUL) for submarines. Personnel shall consult the SMCL to verify that HM is allowed aboard or to identify any use restrictions associated with the HM. HM not listed in the SMCL is considered **prohibited** and shall not be ordered. If a valid requirement exists for a HM item and the material is not listed in the SMCL, the submarine shall complete a SMCL Feedback Report (SFR) (NAVSUP 1400-10/97) and submit it to NAVICP Code 0541 with a copy to the appropriate type commander and procurement department per reference D15-1. NAVICP shall coordinate with Naval Sea Systems Command (NAVSEASYS COM) and the Submarine Material Review Board (SMRB) to respond to the SFR.

Each SMCL item is marked with a HM use category. NAVSEASYS COM assigns these use categories based on a technical and safety and health assessment of the product. These use categories are:

(1) **Permitted (N).** No restriction on use of this HM on submarines.

(2) **Prohibited (X).** HM not allowed aboard submarines at any time.

(3) **Restricted (R).** HM not allowed aboard submarines while underway, except under specific exemptions authorized by the submarine's executive of-

ficer. Restricted material may be used onboard in limited quantities ***while in port and ventilating outboard.***

(4) **Limited (L).** HM that may be used underway for a specific purpose and for which no non-toxic substitute exists. This HM shall not be carried aboard submarines in excess of required quantities.

b. **HM Requisition.** Personnel requiring HM shall only obtain this material through the submarine's supply department. Supply department personnel shall ensure that requisition material is in the SMCL CD-ROM. If the requisitioned HM is assigned a restricted use on the SMCL, written permission from the executive officer will be required to carry or use the material onboard during an underway period.

**NOTE:**

SERVMART purchases of HM shall specifically list the HM to be purchased. All HM purchased through a SERVMART shall be provided to the supply department for recording in the Submarine Material Control Log prior to storage.

c. **HM Open Purchase.** Navy policy is that, to the maximum extent feasible, submarines shall only procure and use standard stock HM.

(1) In the exceptional case for which the stock-numbered product can be clearly demonstrated to be inferior, or due to the urgency of need cannot be satisfied from supply system stock, commanding officers may justify and authorize open market purchases of HM for those items. The submarine shall obtain an MSDS from the manufacturer or supplier and include with a SFR submitted to NAVICP Code 0541, with copies to the appropriate type commander and procurement department.

(2) If submarines or support commands are approached by commercial vendors offering HM not listed in the SMCL for submarine use or for substitution for stock-numbered HM, they shall refer vendors to NAVSEA 03L23, per reference D15-1.

d. **HM Receipt.** The supply department will receive all HM brought aboard the submarine. The supply department shall check all containers of HM obtained through open purchase upon receipt to ensure that they contain a manufacturer's label as described in paragraph D1502e. They shall refuse a container if not so marked. Upon receipt, the receiving person shall check the received material against the SMCL CD-ROM by stock number, manufacturer, and nomenclature to ensure that the material is allowed and determine if any HM use category other than allowed is assigned.

(1) If the material is permitted (N), the receiving person shall enter the material into the Submarine Material Control Log. This entry may be made through the use of form similar to that provided in appendix D15-A.

(2) If the material is assigned a limited use category, the receiving person shall enter the material into the Submarine Material Control Log and make out an Atmosphere Contaminant Tag, (a sample format for the tag is pro-

vided in appendix D15-B). The supply officer/HM coordinator shall sign the Atmosphere Control Tag. The supply officer/HM coordinator shall review the Submarine Material Control Log entry.

(3) If the material is assigned a restricted use category, the receiving person shall enter the material into the Submarine Material Control Log and make out an Atmosphere Contaminant Tag. The supply officer/HM coordinator shall sign the Atmosphere Contaminant Tag. The executive officer shall review the Submarine Material Control Log entry.

e. **Container Marking**

(1) Manufacturer's labels for shipboard identification of HM containers must clearly identify the material name, the manufacturer's name and address, and the nature of the hazard presented by the HM including the organ potentially affected by the material. A manufacturer's label may be a tag, sign, placard, or gummed sticker. When HM is dispensed from the shipping container to another container, the person dispensing the HM shall annotate the receiving container to indicate the material name, manufacturer name and address, and the nature of the hazard (including target organ) as specified by the manufacturer to preserve the continuity of information. To mark unlabeled containers or containers where the label has been destroyed or damaged, ships may use the Department of Defense (DOD) Hazardous Chemical Warning Label. The Hazardous Material Information System (HMIS) (reference D15-2) provides this label and label information at the end of each MSDS. Personnel can print the label on plain paper or the pre-printed color forms: DD 2521 (12/88) (8.5"x11") (S/N 0102-LF-012-0800) or DD 2522 (12/88) (4"x7") (S/N 0102-LF-012-1100).

**NOTE:**

If the material is transferred into a small container, such as a drop-per bottle for boiler water chemistry, and there is insufficient room to place the above information on the label, the label shall contain the material name, manufacture's name, and stock number at a minimum. The remaining information shall be provided on a card in a location known to the users, that is in close proximity to the container, so that it can be readily referred to. In addition, supplemental label information shall be keyed, using numbers or letters, to the smaller containers.

(2) Submarine supply departments shall label HM items that are restricted or limited with an Atmosphere Contaminant Tag (see appendix D15-B) per paragraph D1502d prior to issue. They will assign these tags a sequential number preceded by a letter (R or L) to indicate restricted or limited. If a restricted or limited HM is transferred to another container for use, the new container shall also be labeled with the Atmosphere Contaminant Tag. The department transferring the material to the new container shall obtain the tag (and number) from the supply department.

f. **HM Issue.** The supply department retains only limited quantities of HM as storeroom items. The remainder is distributed to responsible workcenters

as operating space items. The receiving workcenter is responsible for proper stowage of HM in assigned lockers.

g. **HM Reutilization.** Submarines shall practice HM reutilization. This means that submarines will implement efforts to ensure that personnel make all beneficial uses of HM prior to offload as used/excess HM. This requires that material with the earliest expiring shelf-life limitations is used first. In instances in which a HM is used by more than one workcenter, submarines may choose to institute procedures whereby one workcenter is responsible for ordering and storing the HM. This action also includes increasing the useful life of the material by extending the shelf life per approved procedures outlined in references D15-3 and D15-4.

h. **Used/Excess HM Disposal.** When workcenters have completely used a HM or have excess HM, they shall return the container plus any residue to the supply department for disposal. Appendix L of reference D15-5 and Maintenance Requirement Cards (MRCs), as applicable, provide guidance for determining which types of used HM must be collected and held for treatment by shore disposal facilities. The receiving person shall annotate in the Submarine Material Control Log and process the used HM for offload per the procedures of section D1502h(4).

(1) Used HM shall be **segregated**. A container shall normally be filled with one type of HM, i.e., all the used HM in a container shall normally be of only one stock number. Used HM shall either be placed in the container for the original material or in an impervious container specified in appendix D15-D. The container shall be securely sealed using the installed or provided closure devices to ensure the container does not leak during transportation. The container shall be properly labeled (refer to paragraph D1502h(4)(a) for labeling requirements) to indicate content, and stowed in appropriate locations following the stowage precautions in this chapter for comparable HM.

(2) If the contents of an HM container are unknown, the label must state so, and the fleet must pay, from its own account, the costs of chemical analysis to determine specific content. The workcenter originating the HM for offload shall provide any information that may be useful in identifying the origin or composition of the material in the container. If the contents are unknown and the originating workcenter can determine by experience that the material is flammable or combustible, reactive, toxic, or corrosive, that information shall be supplied on the container to allow proper stowage aboard ship and at the receiving shore activity.

(3) Used lube oils shall be collected, stored, and labeled for eventual shore recycling. Synthetic lube oils and hydraulic oils shall be collected separately from other oils.

(4) **Procedures for Off-Loading Used or Excess HM to a Naval Shore Activity.** The supply officer shall be responsible for the receipt and consolidation (as appropriate) of all used/excess HM for offload. Used or excess HM shall be turned over to the shore facility HM offload activity per the requirements of reference D15-5.

(a) **Processing Used HM**

1. The workcenter generating used HM shall ensure that it is properly packaged in the original container or in a container specified for the material in appendix D15-C. If there is any question regarding the integrity of the original container (e.g., badly rusted, badly dented, or poorly sealed), the contents shall be transferred to a new container. If the material is not in its original container, the workcenter shall ensure that the material is labeled per paragraph D1502e. In addition, a label identifying the material as used HM (see appendix D15-D) shall be completed and attached to the container. This label shall contain information on the process in which the material was used (e.g., used air compressor lube oil, circuit board cleaning solvent, spent OBA canisters, etc.). It should also identify any known impurities that the material might contain based on routine analysis that may be conducted for PMS (e.g., Naval Oil Analysis Program (NOAP) test results) and any special storage requirements. This information is necessary to assist the shore activity in properly storing the used HM as well as in filling out disposal documentation if the material is processed as waste.

2. The supply department shall ensure that a DD 1348-1 is prepared for each container of used HM. The following information shall be clearly identified (where known) on the DD 1348-1: the NSN, the material name, and the manufacturer's name and address. The individual filling out the DD 1348-1 shall ensure that the container is properly labeled with information required by paragraph D1502e and with the Used Hazardous Material label specified above.

(b) **Transferring Used HM Ashore**

1. The submarine's supply officer/HM coordinator shall contact the shore activity point of contact to request a pick-up. For used HM which can be identified by a stock number and manufacturer and for which a MSDS is available in the SMCL, the submarine need not provide an MSDS to the receiving activity (one will probably be required if transferring to a non-Navy activity or overseas). Used HM for which a MSDS does not exist in the SMCL or which has been open-purchased shall be accompanied by a hard copy of the MSDS. In situations where compatible materials are inadvertently mixed, the used HM shall be accompanied by the MSDSs of each material in the mixture. If the contents are unknown, the submarine need not include a MSDS, but shall supply information, such as whether the material is flammable, reactive, toxic, or corrosive, in the "Special Stowage Requirements" item of the Used HM label to allow proper stowage at the receiving shore activity.

2. Shore activities shall only require that ships provide used HM that is properly packaged in the original container or in a container specified for the material in appendix D15-C, properly secured, properly labeled, with a properly filled out DD 1348-1, and with a MSDS, if the material originated outside the supply system or a MSDS is unavailable in the SMCL. Material that is non-compliant shall be returned to the originating submarine. Problems experienced with material received from a submarine shall be reported to the command and, if flagrant or repeated, to the submarine's immediate su-

terior in command (ISIC). If any additional requirements (e.g., waste profile sheets) are placed on the shore activity by Federal or State laws and regulations or by the supporting Defense Reutilization and Marketing Office (DRMO), the receiving shore activity shall ensure that these requirements are met using information supplied by the submarine on the DD 1348-1 and container label. When required, analysis of unknown material shall be charged to fleet accounts.

(c) **Excess HM.** A workcenter shall turn in full, properly sealed containers of usable HM in excess of its needs to the supply department. Supply department personnel shall determine if this material may be used elsewhere in the submarine or if it exceeds the submarine's needs. If the material exceeds the submarine's needs, supply department personnel shall transfer it to the supporting FISC with a properly completed DD 1348-1 for each S/N of material being transferred.

#### **D1503. GENERAL STORAGE STANDARDS**

Submarines shall observe the following general standards to minimize hazards inherent in the handling and storage of HM:

a. Mark stowage locations (including lockers) to identify type of HM stored and keep the location/materials clean and dry at all times. Submarines shall post HM stowage locations with a CAUTION sign that states:

#### **HAZARDOUS MATERIAL STORAGE AREA**

Submarines should obtain these signs through the Navy supply system using National Stock Number (S/N) 9905-01-342-4851 (10" X 7") or 9905-01-342-4859 (3" X 5").

b. Provide ventilation in HM stowage areas, where appropriate. Ventilation of tanks shall be continued until the gas free engineer certifies they are safe for reentry.

c. Allow only authorized personnel access to stowage locations, where appropriate.

d. When transferring material from one container to another, ensure that existing precautionary labeling is retained and that subsequent containers are marked with appropriate precautionary labeling. DD Form 2521 or DD 2522 may be used for labeling of containers into which HM is transferred. Subsequent containers should also contain proper Atmosphere Contaminant Tags.

e. Do not transfer material to a container that has previously stored a different material without first checking the materials' compatibility.

f. Stow HM only in a container which is compatible to the material (e.g., do not place corrosive materials in metal drums).

g. Stack containers in such a way that they will not crush lower containers, become imbalanced, or be difficult to access.

- h. Use material on a first-in, first-out basis, considering shelf life.
- i. Prohibit smoking, eating, or drinking in stowage areas. Signs shall be posted indicating these requirements.
- j. Ensure that open flames or spark producing items are not permitted in stowage areas.
- k. When not in use, seal and protect all containers against physical damage and secure for heavy seas.
- l. Maintain explosion proof electrical fixtures in proper condition in appropriate HM stowage areas.

**D1504. GENERAL HANDLING AND USE STANDARDS**

The *Hazardous Material User's Guide* (reference D15-6) provides information on the handling and use of 22 HM groups. This guide should be consulted for precautions on handling and use of HM within these groups. Observe the following general standards when handling HM:

- a. Workcenter supervisors shall ensure that, prior to using any HM, personnel under their supervision are trained on the hazards associated with that material and that they have been provided with necessary protective clothing and equipment (i.e., eye protection, respiratory devices, and gloves impermeable to the HM in use).
- b. Workcenter supervisors shall ensure that spaces are well-ventilated in areas where HM is used.
- c. Upon completion of HM use, return surplus material to its appropriate storage location.
- d. Avoid breathing vapors or dust when using HM.
- e. Avoid contact with the eyes or prolonged contact with skin when using HM.
- f. Prohibit smoking, drinking, or eating in areas where open containers of HM is being used.
- g. Ensure personal protective equipment (eye protection, respiratory devices, gloves impermeable to the HM in use, etc.) is in good operating condition and is readily available to all personnel working with HM.
- h. Before entering spaces that have been closed for significant periods of time, have the ship's MDR determine that atmosphere is safe for entry for ship's force personnel only. For all other Navy personnel, other than the ship's force, a qualified Gas Free Engineer is required to determine if the space is safe for entry.
- i. Use a respirator with appropriate filter when potentially exposed to particulate matter, hazardous gases, or vapors. Consult the MDR for specific

guidance in this regard, and for a determination of the need for more stringent respiratory protection requirements.

- j. Do not add incompatible materials to the same collection container.

**D1505. FLAMMABLE AND COMBUSTIBLE MATERIAL**

A flammable material is any solid, liquid, vapor, or gas that will ignite easily and burn rapidly with a flash point less than 1500°F. The Department of Transportation (DOT) and the National Fire Protection Association (NFPA) define flammable liquid as a liquid with a flash point below 141°F. Liquids that have a flash point greater than 141°F but less than 200°F are defined by DOT and NFPA as combustible liquids. The NFPA defines non-liquid materials such as paper, wood, and rags as ordinary combustibles. Although all flammable and combustible liquids present some danger to personnel and the ship, of prime concern are those liquids having flash points less than 200°F. Never carry flammable or combustible liquids aboard ship in quantities in excess of that required; always stow flammable and combustible liquids in approved locations; and never use flammable or combustible liquids near a heat source or spark-producing device.

**a. Storage Standards**

(1) Store flammable and combustible materials following precautions listed in paragraph D1503.

(2) Store flammable and combustible materials separately from oxidizing materials (i.e., sodium nitrate, calcium hypochlorite, potassium permanganate, peroxides, and strong inorganic acids (nitric, hydrochloric, and sulfuric acids)), (see appendix D15-E: Hazardous Material Compatibility Storage Diagram).

(3) Store a maximum quantity of 12 gallons of any one type of material with a flash point greater than 200°F, but less than 1500°F (excluding grease), in an area designated by the engineer officer. The containers shall not be stowed within 3 feet of any surface where the temperature may exceed 140°F. More than 12 gallons of grease may be stowed in one location (in original containers and greater than 3 feet from 140°F surfaces).

(4) Submarines not having flammable/combustible liquid lockers shall store all items with a flashpoint less than 200°F, solids and semi-solids which give off flammable vapors, solids which burn with extreme rapidity because of self contained oxygen, and materials which ignite spontaneously when exposed to air in a manner that minimizes fire hazards until such time as flammable/combustible liquid lockers available.

(5) Do not stow combustible materials such as rags, paper and wood in the same area as flammable materials; however, submarines may stow oily rags in these areas after placing in suitable containers.

(6) Prohibit open flames or spark-producing items in the vicinity of flammable stowage locations.



(7) Ensure containers are secured with metal banding or other approved tie-downs vice manila line.

b. Handling and Usage Standards

(1) Handle and use flammable materials per the precautions of paragraph D1504. Many flammable and combustible materials have additional hazardous properties, such as toxicity. See also Section D1506.

(2) Never use flammable material near a heat source or a spark-producing device. Do not smoke in an area in which flammable material is being used. Designate spaces in which flammable materials are being used as **NO SMOKING** areas.

(3) Keep scrapings and cleaning rags soaked with flammable or combustible liquids in a covered metal container until the HM is disposed of properly.

(4) Keep suitable fire extinguishing equipment and materials ready at all times for instant use.

(5) Ensure that containers of partially used flammable materials are returned to proper stowage facilities, are tightly closed, and are properly labeled.

**D1506. TOXIC MATERIAL**

A toxic substance has the inherent capacity to produce personal injury or death through ingestion, inhalation, or absorption through any body surface. Toxic materials are considered, and often marked by the manufacturer as being, poisonous. Avoid contact with toxic materials by using suitable protective clothing and following safe handling procedures. Submarines must, to achieve their missions, carry some toxic material, and personnel will be called upon at times to use them. Solvents, degreasers, and refrigerants are but a few of the toxic materials that may be found aboard submarine. If stowed, handled, and used in the proper manner, toxic materials present little or no danger.

a. Storage Standards

(1) Store all toxic material per the standards of paragraph D1503. Many toxic materials have additional hazardous properties, such as flammability or combustibility. See also section D1505.

(2) Store all toxic material in cool, dry, well ventilated locations separated from all sources of ignition, acids and acid mists/vapors, caustics, and oxidizers, (see appendix D15-E: Hazardous Material Compatibility Storage Diagram).

(3) Seal all containers and protect them against physical damage.

b. Handling and Usage Standards

(1) Handle and use toxic materials per the precautions listed in paragraph D1504.

(2) Use appropriate gloves and protective clothing when handling sensitizers or potential skin irritants such as epoxy and polyester resins and hardeners where significant skin contact is likely. Protective skin cream shall only be used to supplement, but not replace impermeable gloves for any operation where significant contact work with potentially toxic/irritant/sensitizing materials is likely.

c. **Halocarbons (Refrigerants)**. Liquid or gaseous halocarbons have multiple applications in the Navy. They are used as refrigerants, solvents, and dielectric fluids and as line flushing, and degreasing agents. With common names of refrigerant R-11, R-12, R-22, R-113, R-114, and R-116, these products may be better known by names such as FREON, ISOTRON, FRIGEN, FLUORANE, FREON MF, FREON TF, GENSOLV D, BLACO-TRON TF, and ARKLONE P-113.

**NOTE:**

Due to changes in the Clean Air Act, the use of halocarbons is being phased out; however, they are still used in the Navy.

(1) To minimize the size of spills, procure, store, and use halocarbons in the smallest amount and container possible for an operation.

(2) The Naval Supply System stocks all normally used halocarbons, and submarines should procure them only through that system.

(3) Prohibit smoking and hot work in areas or vicinity where halocarbons are being used.

(4) Prohibit storage and consumption of food and tobacco in areas where halocarbons are being used.

(5) Some types of FREON are nearly odorless and can numb the sense of smell.

(6) Only use FREON-113 as a solvent when specified and when such use is essential. It may not be stored or carried aboard (see 1,1,1-trichloroethane below).

d. **Toxic Cleaning Solvents**. Toxic cleaning solvents such as 1,1,1-Trichloroethane shall not be stored or carried aboard. Submarines shall not attempt solvent cleaning except alongside a pier or tender. Submarines shall not use solvent cleaning until mechanical cleaning has failed or is technically impossible (for example, FREON flushing of O<sub>2</sub> piping). Use only prescribed cleaning solvents with a flashpoint greater than 140°F. Do not spray diesel fuel or other solvents as a cleaning agent. When cleaning solvents are used, use explosion-proof mechanical exhaust ventilation to exhaust vapors overboard to prevent reentry and recirculation. The ventilation rate (cubic feet per minute) and any other control measures will be determined by the cognizant tender industrial hygienist (safety officer) or the supporting shore activity's shore maritime gas free engineer.

e. Polychlorinated Biphenyls

(1) In general, PCBs, if properly managed, do not present a major health hazard. The Environmental Protection Agency banned PCBs in most manufacturing processes in 1979. However, PCBs may be found as a fire retardant in many materials used in ship construction where stocks of PCB material purchased prior to the ban were consumed. Some examples of materials used in submarine construction that may contain PCBs include: sound dampening on reduction gears; electrical cable insulation; foam hull insulation; rubber (used as banding and sheet rubber for cableways, pipe hanger liners, isolation mount, and vent gaskets); packing and grommets for electrical cable stuffing boxes; and pipe insulation and lagging.

**NOTE:**

PCB-containing construction materials installed in Navy submarines need not be removed just because they contains PCBs. Installed PCB-containing construction materials normally need not be labeled.

(2) Label PCB-containing electrical/electronic components (primarily capacitors) per the guidance provided in reference D15-7. Label PCB-contaminated tools and waste materials (such as dust from ventilation ducting which are known to contain PCB-impregnated felt gaskets) per Appendix D15-F.

(3) With the exception of ventilation duct cleaning, work involving known or potential PCB-containing materials shall normally be accomplished in port. Obtain assistance through the nearest naval shipyard environmental program office, Navy medical treatment facility, or NAVENPVNTMEDU prior to such action.

(4) For situations not involving unprotected PCB skin contact, employ routine work and personal hygiene measures (such as washing hands and other exposed skin surfaces with soap and water when work is completed) appropriate for any occupational setting.

(a) When working with PCB-impregnated materials such as insulating felts or with articles that contain liquid PCB solutions, strictly observe good housekeeping procedures to avoid the possibility of secondary surface contamination.

(b) Personnel involved in PCB-related work activities shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the space in which work is being performed.

(c) Collect and dispose of PCB-containing waste, scrap, and debris; dust collected from ventilation systems known or suspected of containing PCB-impregnated felt gaskets; and PCB-contaminated clothing (consigned for disposal) in sealed impermeable containers specified in appendix D15-C and labeled with the large label described in appendix D15-F. Disposal should be per the procedures of section D1502e. Specifically notify the receiving activity that PCBs or material containing PCBs is being transferred.

(d) Do not perform hot work in the immediate area when work is performed with PCBs or PCB-containing material. Do not perform hot work, including welding, torch cutting, brazing, grinding, and sawing on ventilation systems components within 12 inches of either side of a flange containing felt gaskets.

(e) Specific work practices for the removal and handling of PCB felt, maintenance and cleaning of ventilation ducting containing PCB felt, and maintenance and handling of other shipboard PCB materials are provided in reference D15-7.

(f) Label all reusable cleaning equipment employed in cleaning systems potentially contaminated with PCBs with PCB labels described in appendix D15-F. Use the large label whenever practicable. If the large label does not fit, use the small label. Equipment to be labeled includes vacuum cleaner, vacuum hoses and working end tools, brushes, Vent Duct Cleaning System components, dust pans, scrapers, and putty knives. Label; bag, where possible; and stow this equipment in a location where it will not be accidentally used for other purposes.

(5) The baseline industrial hygiene survey shall specify personal protective equipment and medical surveillance for any potential PCB-related work.

**D1507. CORROSIVE MATERIALS**

Corrosive materials are chemicals, such as acids, alkalis, or other liquids or solids which, when in contact with living tissue, will cause severe damage to such tissue by chemical action. In case of leakage, corrosive material will materially damage surfaces or cause fire when in contact with organic matter or with certain chemicals.

**a. Storage Standards**

(1) Store all corrosive materials per the precautions listed in paragraph D1503.

(2) Store corrosive materials in their original containers.

(3) Ensure that corrosive materials are not stored in the vicinity of oxidizers or other incompatible materials, (see appendix D15-E: Hazardous Material Compatibility Storage Diagram).

(4) Ensure that acids and alkalis are stowed separate from each other.

**b. Handling and Usage Standards**

(1) Handle and use corrosive materials per the precautions listed in paragraph D1504.

(2) Wear chemical goggles and full face shields, rubber gloves, rubber boots, and aprons when handling acids or other corrosive materials.

(3) Never allow corrosive materials or their vapors to come in contact with the skin or eyes.

c. **Inorganic Acids**

(1) Stow liquid inorganic acids such as hydrochloric, sulfuric, nitric and phosphoric acids bottled in glass or plastic in such a manner that they are cushioned against shock. They should be kept in their original shipping carton or box inside suitable acid-resistant lockers, cabinets, or chests.

(2) Maintain hydrofluoric acid in acid-proof polyethylene or ceresin-lined bottles at all times and never allow them to come in contact with skin or eyes.

(3) Do not stow inorganic acids in the vicinity of flammable liquids.

d. **Organic Acids**. Do not permit liquid and solid organic acids such as glacial acetic, oxalic, carbolic, cresylic, and picric acids to come in contact with the eyes or skin. These acids are corrosive to aluminum and its alloys, to zinc, and to lead. Keep these acids, usually packaged in glass bottles, from freezing and physical damage. Stow these acids in an approved acid locker lined with acid-resistant material, separated by at least 3 feet from all other material. Lockers shall be separated by a partition, or by at least 3 feet from all other material.

e. **Alkalies**. Stow alkalies (bases), such as lithium hydroxide, sodium hydroxide, potassium hydroxide (lye), disodium phosphate, trisodium phosphate, sodium carbonate, and ammonium hydroxide (ammonia water) in designated lockers, cabinets, or chests. Keep alkalies separated from acids, oxidizers, and other incompatible materials. Ensure the stowage area is dry.

**NOTE:**

Many submarine cleaning agents and laundry materials contain alkalies in very strong concentrations. Specified stowage and handling precautions for these materials must be observed.

**D1508. OXIDIZERS**

An oxidizer is a material such as chlorate, perchlorate, permanganate, peroxide, or nitrate which yields oxygen readily to support the combustion of organic matter, or which may produce heat or react explosively when it comes in contact with many other materials. Higher temperatures increase the possibility of oxygen release from oxidizers and the possible initiation of fire. Heat shall be avoided when handling and storing oxidizers. Oxygen candles are oxidizers.

a. **Storage Standards**

(1) Store oxidizers following precautions listed in paragraph D1503.

(2) Do not store oxidizers in an area adjacent to a torpedo room or small arms ammunition storage or heat source or where the maximum temperature exceeds 100°F under normal operating conditions.

(3) Ensure that oxidizers are not stored in the same compartment with easily oxidizable material such as fuels, oils, grease, paints, or cellulose products. Do not remove or obliterate labels.

b. **Handling and Usage Standards**

(1) Handle and use oxidizers per precautions listed in paragraph D1504.

(2) When transferring oxidizers to second containers, **ensure that the second container is compatible with oxidizing material**. Place appropriate hazardous material labels on the second container.

(3) Do not remove or obliterate warning labels from containers.

(4) Ensure oxidizing materials are only handled or used by authorized personnel.

c. **Calcium hypochlorite** is a chemical substance used to provide the sanitizing and bleaching property of chlorine without requiring the handling of liquid or gaseous chlorine.

(1) The following standards apply to the stowage of calcium hypochlorite:

(a) The ready usage stock of 6-ounce bottles issued to the Medical and Engineering Departments shall be stowed in a Medical Instrument and Supply Set Case, S/N 6545-00-131-6992, which shall be kept in a secured locker with ventilation holes, preferably located in the cognizant department office space. Under no circumstances shall the stock of calcium hypochlorite bottles be stowed in a machinery or nuclear space, berthing space, storeroom, or in the nucleonics laboratory areas.

(b) Label all lockers, bins, and enclosures with red letters on a white background:

**HAZARDOUS MATERIAL, CALCIUM HYPOCHLORITE**

(c) Dispose of containers as used/excess HM and replace when they exceed 2 years from the date of manufacture.

(2) The following precautions apply when using calcium hypochlorite:

(a) Mix only with water.

(b) Do not allow to come into contact with paints, oils, greases, wetting agents, detergents, acids, antifreeze, alkalis, or organic and combustible materials.

(c) Do not remove or obliterate warning labels.

(d) Dispense only in clean, dry utensils and only in amounts required for immediate use.

(e) Avoid contact with skin and eyes.

(f) Ensure containers are not used for any other purpose.

(g) For external contact or if taken internally, follow the instructions printed on the container label or on the material safety data sheet (MSDS).

(h) No special firefighting precautions are required for fires caused by calcium hypochlorite.

**D1509. AEROSOLS**

Aerosol spray cans are prohibited aboard submarines except as specifically allowed by the SMCL.

**D1510. COMPRESSED GASES**

Submarines carry numerous cylinders of compressed gases. Compressed gases are used for welding operations (oxygen and acetylene), in refrigeration and air conditioning systems (FREON), and for purging various systems (nitrogen). Cylinders of compressed gases are potential explosion, fire, and health hazards if do not strictly comply with existing requirements.

**a. Storage Requirements**

**(1) General**

(a) Only stow compressed gases in compartments and locations designated for cylinder storage, as shown in applicable plans for each submarine. Whenever practical, stowage shall permit removal of any cylinder without disturbing other cylinders. Such locations shall:

1. Be kept free of flammable materials (especially greases and oils).

2. Be maintained at temperatures below 130 degrees Fahrenheit.

(b) Ensure that cylinder valve protection caps are in place.

(c) Stow cylinders by date of receipt, and place into service in the order of receipt.

(d) Tag empty cylinders EMPTY, mark MT, and segregate from full or partially full cylinders.

**(2) Ready Service**

(a) The following gas cylinders are found aboard submarines:

1. Fire extinguishers (portable).
2. Fire-extinguishing cylinders permanently connected to fixed fire-extinguishing systems.
3. Gas and chemical canisters for oxygen breathing apparatus.
4. Welding cylinders.
5. Medical gas cylinders.
6. Cylinders containing refrigerants.
7. Disposable cylinders supplied as repair kit accessories (halide leak detector kits, for example).
8. Gas cylinders for the propulsion plant operations.
9. Diving air (SCUBA) tanks.

(b) Welding Cylinders. Observe the following special instructions and precautions regarding oxygen and fuel gas cylinders in ready service:

1. Install cylinders of gas per approved plans or specifications.
2. Fasten cylinders securely in a rack. Ensure acetylene cylinders are always stowed vertically. Securely fasten the rack, in turn, at the designated locations.
3. Never leave unstowed equipment unattended.
4. Return welding units to designated stowage as soon as work is complete.
5. Attach a card to each welding unit with the following instructions:

Return to (designated location) immediately on completion of work.  
Unit shall not be left unattended while away from above location.  
Unit is **NOT SECURE** while pressure shows on gauges, or cylinders are not firmly fastened to rack and properly stowed.

b. **Handling and Usage Requirements**

(1) Never drop cylinders nor permit them to strike against one another violently.

(2) Never use a lifting magnet or a sling (line or chain) when handling cylinders. If a crane or hoist is used, provide a safe cradle or platform to hold cylinders. Do not lift cylinders by valve protection caps.



(3) When returning empty cylinders, be sure that valves are closed and that valve outlet, if provided, and cylinder valve protection caps are in place.

(4) Ensure that all cylinders are approved under DOT regulations. Non-magnetic cylinders are an exception.

(5) Only refill cylinders when the command specifically approves such action.

(6) Fill a cylinder only with the gas for which the cylinder has been specifically designated.

(7) Do not remove or change the numbers or marks stamped into cylinders without the specific approval of the Defense General Supply Center.

(8) Never use cylinders for rollers, supports, or for any purpose other than to carry gas.

(9) Never tamper with the safety devices on valves or cylinders.

(10) Never hammer or strike the valve wheel in attempting to open or close valves. Use only wrenches or tools provided and approved for this purpose. If valve cannot be turned using hand or proper tool, return the cylinder to supply activity.

(11) Be sure that the threads of regulators or other auxiliary equipment are the same as those on cylinder valve outlets. Never force connections that do not fit.

(12) Do not use regulators, pressure gauges, manifolds, and related equipment that are provided for a particular gas on cylinders containing different gases.

(13) Only repair or alter cylinders or valves when authorized by NAVSEASYS COM. If trouble is experienced, remove cylinder from service, tag as defective, and return to supply activity. Do not remove the stem from a diaphragm-type cylinder valve.

(14) Never subject compressed gas cylinders, either in stowage or in service, to a temperature in excess of 130°F. Never permit a direct flame to come in contact with any part of a compressed gas cylinder.

(15) Handle cylinders carefully. Rough handling, knocks, or falls are liable to damage the cylinder, valve, or safety devices and may cause leakage. Protect cylinders from objects that will cut or otherwise abrade the surface of the metal.

(16) When testing for leaking gas cylinders, use soapy water or leak-detection compound conforming to MIL-L-25567.

(17) Only use a gas cylinder that is properly marked (by color of paints or with the name of the gas stenciled on cylinder and valve). Return all mis-marked cylinders to the nearest Naval Supply Depot.

(18) Work center supervisors shall ensure that supply and exhaust ventilation exists in compartments where compressed gases are stored or in use, systems are in good operating condition, and have been evaluated as adequate by an industrial hygiene survey team.

(19) To thaw out valve outlets that are clogged with ice, use warm (not boiling) water. The use of boiling water will melt the fusible plugs, if present, and vent the cylinders.

(20) Never discharge a cylinder into any device or equipment in which the gas will be entrapped and create pressure. The only exception is a cylinder equipped with a pressure regulator set to control the pressure.

(21) Never use oil-tolerant gases when oil-free gases are required. Non-interchangeable valve outlets discourage this practice.

(22) Close the cylinder valve and release the gas from the regulator before removing the regulator from a cylinder valve.

**c. Recharging Cylinders Aboard Ships**

(1) Recharge only diving air (SCUBA) cylinders: The charging of divers' scuba tanks from the ship's air system shall meet the purity requirements of paragraph 5.2.1.2 of reference 15-8. Commanding Officers may omit this requirement during emergency situations.

(2) Personnel may refill small cylinders of hydrogen routinely used for nuclear propulsion plant operations per the Reactor Plant Manual.

(3) Personnel may recharge fire extinguishers and fire extinguishing system cylinders per NSTM 555.

(4) Recharge a cylinder only if less than 5 years have passed since its last hydrostatic test date. The only exceptions are 3A and 3AA cylinders having water capacities under 125 pounds, for which a 10-year hydrostatic test frequency is approved. For fire extinguisher and fire extinguishing system cylinder hydrostatic test requirements, see NSTM 555.

(5) Never attempt to mix gases in a cylinder. Unauthorized personnel should never refill a cylinder.

**d. Welding Cylinders**

(1) Place cylinders a safe distance away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them. Use fire-resistant shields.

(2) Do not place cylinders where they might become part of an electric circuit. Avoid contact with energized equipment. Keep cylinders away from

pipng systems that may be used for grounding electric circuits, such as for arc welding machines. Any practice, such as the tapping of an electrode against a cylinder to strike an arc, is prohibited.

(3) Unless connected to a manifold, do not use oxygen from a cylinder without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, open the valve slightly for an instant and then close. Always stand to one side of the outlet when opening the cylinder valve.

(4) Always place the fuel-gas cylinders with valve end up. Store and ship liquefied gases with the valve end up. Prior to use, store acetylene cylinders in a vertical position for a minimum of 2 hours to stabilize the gas. If acetone flows from the cylinder, put aside the cylinder for an additional period.

(5) Do not place anything on top of an acetylene cylinder that may damage the safety device or interfere with the quick closing of the valve.

(6) Never use fuel gas from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a regulator attached to the cylinder valve or manifold.

(7) Do not use copper tubing with acetylene gas cylinders due to the increased potential for an explosive chemical reaction.

(8) Back off on the regulation screws, and then open the cylinder valves slowly. Open the acetylene valve one-fourth to one-half turn. This will allow an adequate flow of acetylene, and the valve can be closed quickly in an emergency (never open the acetylene cylinder valve more than one and a half turns). The oxygen cylinder valve should be opened all the way to eliminate leakage around the stem.

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## CHAPTER D15

### REFERENCES

- D15-1 NAVSEA S9510-AB-ATM-010/(O), Nuclear Powered Submarine Atmosphere Control Manual (NOTAL)
- D15-2 Hazardous Material Information System (HMIS)
- D15-3 NAVSUP Publication 4105, List of Items Requiring Special Handling (NOTAL)
- D15-4 NAVSUPINST 4410.52B, Shelf-Life Item Identification, Management, and Control (NOTAL)
- D15-5 OPNAVINST 5090.1B, Environmental and Natural Resources Program Manual (NOTAL)
- D15-6 OPNAV P-45-110-95, Hazardous Material Users Guide (NOTAL)

OPNAVINST 5100.19C CH-2  
30 July 1999

D15-7 NAVSEA S9593-A1-MAN-010, *Shipboard Management Guide to PCBs* and  
associated NAVSEA issued PCB Advisories (NOTAL)

D15-8 NAVSEA 0944-LP-001-9010, U.S. Navy Diving Manual (NOTAL)

## Appendix D15-A

## SUBMARINE MATERIAL CONTROL LOG

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 MATERIAL[illegible]

**Appendix D15-B**

**ATMOSPHERE CONTAMINANT TAG**

NAME OF ITEM:	_____
DATE:	_____ TAG: _____
USAGE CATEGORY:	_____
STORAGE LOCATION:	_____
SIGNATURE OF SUPPLY OFFICER/ HM COORDINATOR:	_____

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Acetic acid	Plastic bottle; plastic-lined steel drum
Acetic acid, glacial	Plastic bottle
Acetone	Tin can; steel drum, bung, and vent
Activator/stabilizer (sodium borate)	Plastic-lined steel drum
Adhesive, lagging (organic polymer)	Steel drum
Adhesive, N.O.S. <sup>5</sup>	Steel drum
AFFF (aqueous film forming foam)	Variable <sup>2</sup>
Alodine 1201 (chromic acid)	Glass carboy
Ammonia solution, nickel electroplating	Plastic bottle
Aniline	Tin can; steel drum, bung, and vent
Asbestos	6 mil (6/1,000 inch) plastic bag
Batteries (lead-acid or alkaline wet cell)	Steel drum <sup>4</sup>
Battery acid (sulfuric)	Plastic bottle; plastic-lined steel drum <sup>3</sup>
Baygon (phenolic pesticide)	Steel drum, bung, and vent
Blanket wash (acacia gum)	Steel drum
Bulbs, fluorescent light (with mercury)	Original carton
Chemicals, photographic, N.O.S. <sup>5</sup>	Plastic bottle
Chromium electroplating solution	Plastic bottle
Citric acid	Plastic bottle <sup>3</sup>
Cleaner, chemical, N.O.S. <sup>5</sup>	Tin can; steel drum
Cleaning solvent, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Cobalt electroplating solution	Plastic bottle

**Appendix D15-C**

**HAZARDOUS MATERIAL CONTAINERS**

**PART 1**

**SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE**

<b>Hazardous Material</b>	<b>Container<sup>1</sup></b>
Compound, epoxy	Steel drum
Compound, silicone	Steel drum
Concentrated Solutions (photo refresher) N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Copper electroplating solution	Plastic bottle
Compound, antiseize (graphite-petroleum)	Steel drum, removable cover
Compound, antiseize (lead oleate)	Steel drum, removable cover
Compound, boiler passivator (oxalic acid)	Plastic-lined steel drum
Compound, descaler (caustic/acid)	Plastic-lined steel drum
Compound, sealing (synthetic polymer)	Steel drum
Damping fluid (petroleum base)	Tin can
Darco drycoal activated	Steel drum (for contaminated material, removable cover)
Developer, N.O.S. <sup>5</sup>	Plastic-lined steel drum
Disinfectant, fungisol (quinone)	Plastic bottle
Disinfectant, general purpose	Steel drum, bung, and vent
Disodium phosphate	Steel drum, removable cover
Earth, diatomaceous (filter)	Plastic-lined steel drum (for contaminated material)
Electroplating etching solution, N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Ethylene glycol (antifreeze)	Plastic-lined steel drum
Ethyl alcohol	Plastic bottle
Fiberglass epoxy	Steel drum
Fixer (w/silver halides), N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum



Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Flux (sodium nitrate/nitrite) N.O.S. <sup>5</sup>	Tin can; steel drum
Formic acid solution, nickel electroplating	Plastic bottle; plastic-lined steel drum
Freon	Plastic bottle; plastic-lined steel drum
Grease, ball bearing	Steel drum, removable cover
Grease, general purpose	Steel drum, removable cover
Grease, graphite	Steel drum, removable cover
Grease, halocarbon	Steel drum, removable cover
Hydraulic fluid (petroleum)	Steel drum, removable cover
Hydraulic fluid (synthetic)	Epoxy-lined steel can; plastic lined steel drum
Hydrochloric acid	Plastic bottle <sup>3</sup>
Hydrofluoric acid	Plastic bottle
Hydrogen peroxide	Plastic bottle; plastic-lined steel drum
Hypo cleaning (ammonium persulfate)	Plastic-lined steel drum
Indicator, stop bath (organic dye)	Steel drum, bung, and vent
Ink, black oil based	Steel drum, bung, and vent
Insecticide diazinon (organophosphate)	Tin can; steel drum, bung, and vent
Isopropyl alcohol	Plastic bottle
Lacquers	Tin can; steel drum, bung, and vent
Leak test (penetrant)	Plastic bottle
Lithographic solutions, N.O.S. <sup>5</sup>	Plastic bottle; plastic-lined steel drum
Lithographic solvents, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Mercuric nitrate	Plastic bottle

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Mercury (amalgam)	Plastic bottle
Mercury remover (calcium oxide-sulfur)	Steel drum, removable cover
Methyl alcohol	Plastic bottle
Methyl ethyl ketone	Steel drum, bung, and vent
Molybdenum graphite, drylube	Steel drum, removable cover
Molybdenum nickel 447	Plastic bottle
Morpholine, 40 percent	Tin can; steel drum <sup>3</sup> , bung, and vent
Naphtha	Steel drum, bung, and vent
Nickel, chromium, aluminum 441	Tin can; steel drum, removable cover
Nickel solutions	Plastic bottle
Nitrate, silver	Plastic bottle; plastic-lined steel drum
Nitric acid	Glass carboy
Nonskid flight deck compound (asphaltic)	Steel drum, removable cover
Oil, cutting (synthetic)	Epoxy-lined steel can
Oil, liquid coolant (synthetic)	Epoxy-lined steel can
Oil, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Oxygen breathing apparatus canister	Fiberboard box
Paint, enamel, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Perchloroethylene	Steel drum, bung, and vent
Petrobond sand with waste oils	Steel drum, removable cover
Phosphoric acid	Plastic bottle; plastic-lined steel drum
Pinso pads (shellac)	Steel drum, removable cover

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Polychlorinated Biphenyls (PCB's), items containing	Polyethylene lined steel cans; plastic-lined steel drum, bung, and vent/removable cover
Remover, paint (caustic)	Plastic bottle; plastic-lined steel drum
Resin, ion exchange (activated polymers)	Steel drum (for contaminated material)
Resin, laminating (plastic)	Steel drum
Reverser (aromatic hydrocarbon reducers)	Steel can
Silver solutions	Plastic bottle
Sodium chromate (ballast)	Variable <sup>2</sup>
Sodium chromate	Plastic bottle
Sodium cyanide solution, gold electroplating	Plastic bottle
Sodium hydroxide solid	Steel drum, removable cover
Sodium hydroxide solution	Steel can; steel drum <sup>3</sup> , bung, and vent
Sodium nitrate	Steel drum
Sodium phosphate	Steel drum <sup>3</sup>
Stannous chloride	Plastic bottle
Stannous fluoride	Plastic bottle
Stop bath, N.O.S. <sup>5</sup>	Plastic bottle
Sulfamic acid solid	Plastic-lined steel drum
Sulfamic acid solution	Plastic bottle; plastic-lined steel drum <sup>3</sup>
Sulfuric acid	Glass carboy; plastic bottle; plastic-lined steel drum
Thinner (organic), N.O.S. <sup>5</sup>	Tin can; steel can; steel drum

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
Tin plating solution	Plastic bottle
Tin 2090	Plastic bottle
Toluene	Tin can; steel can; steel drum, bung, and vent
Trichloroethane solvent	Tin can; steel can; steel drum, bung, and vent
Trichloroethylene	Tin can; steel can; steel drum, bung, and vent
Trichlorofluoromethane	Tin can; steel can; steel drum, bung, and vent
Trisodium phosphate	Steel drum <sup>3</sup>
Varnish, insulating electrical	Steel drum, bung, and vent
Varnish, N.O.S. <sup>5</sup>	Steel drum, bung, and vent
Varnish, phenolic resin	Steel drum
Xylene	Tin can; steel can; steel drum, bung, and vent
Zinc quick cold galvanizing	Plastic bottle; plastic-lined steel drum

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 1

SHIPBOARD USED/EXCESS MATERIAL/CONTAINER CROSS-REFERENCE

Hazardous Material	Container <sup>1</sup>
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- NOTES:**
1. Wherever possible, the Department of Transportation-approved container used in the original issue of the material shall be reused. Container openings specified are for storage of those materials that are characteristically either liquid, semi-solid, or solid. Some materials (for example, silicone compounds) may appear in more than one state, depending upon usage. The choice of openings for containers used to hold those materials shall be made on a case-by-case basis.
  2. No standard container proposed. Containers may vary from 5- to 55-gallon drums to large bulk tanks.
  3. Bulk usage is probable in large scale operations.
  4. Typical shipboard portable wet-cell batteries vary widely in size. Accordingly, personnel shall match the size of the storage drums used to the size and number of batteries to be containerized. A standard 18 gauge, 55-gallon steel drum, for example, will accommodate, respectively, two BB259 batteries; four BB258 batteries; six BB257 batteries; or forty BB255 batteries. (Weight constraints, however, may also be a factor in determining the total number of batteries per container.) Batteries shall be stored right side up.
  5. Not otherwise specified.

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
<u>Bag</u>	8105-00-848-9631	Polyolefin, single wall, 5 mil, 36-in by 54-in, flat, wire tie	PPP-B-26 TY 2
Plastic bottle with screw cap <sup>3</sup> closure	8125-00-174-0852	Polyethylene, 1 gal, round	MIL-B-26701
	8125-00-731-6016	Polyethylene, 13 gal, round	Not available
	8125-00-888-7069	Polyethylene, 5 gal, round	Not available
Fiberboard box	8115-01-012-4597	Fiberboard, RSC style, 34-in by 26-in by 16-in, burst-strength 400 lb	DOT 2C PPP-B-636
Tin can with screw cap <sup>3</sup> closure	8110-00-879-7182	Tin, 1 gal, oblong, enamel outside surface treatment	DOT 2F PPP-C-96 TY 5 CL4
Steel can lined	8110-00-128-6819 <sup>4</sup>	Steel, 24 gauge, 1 gal, screw cap with neoprene liner closure, epoxy resin interior lining	DOT 17C
	8110-00-400-5748 <sup>4</sup>	Steel, 24 gauge, 5 gal, screw cap with neoprene liner closure, epoxy resin interior lining	DOT 17C PPP-P-704 TY 1 CL4, 11
Glass carboy	8125-00-598-9380	Glass, 5 gal, wood box overpack	MIL-C-17932 TY B
Steel drum with removable cover	8110-00-030-7780 <sup>4</sup>	Steel, 16 gauge, 55 gal, removable cover with lock ring, enamel outside surface treatment	DOT 17H
	8110-00-951-9728	Bolt ring set for 55 gal drum	None
	8110-00-823-8121	Steel, 18 gauge, 55 gal, removable cover with lock ring, enamel outside surface treatment	DOT 17H PPP-D-729 TY 4
	8110-01-101-4055	Hazardous material recovery, 85 gal, open head	None

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
Steel drum with removable cover <sup>3</sup>	8110-00-866-1728	Steel, 18 gauge, 30.0 gal., removable cover with lock ring, enamel outside/inside surface treatment	None
	8110-01-016-7362	Bolt ring set for 30 gal. drum	None
	8110-00-082-2625	Steel, 18 gauge, 27 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-044-2984	Steel, 18 gauge, 20 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5716	Steel, 20 gauge, 12 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5715	Steel, 20 gauge, 9 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-00-254-5713	Steel, 22 gauge, 6 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8810-01-254-5722	Steel, 22 gauge, 4 gal., removable cover with lock ring, enamel inside/outside treatment	None
	8110-01-101-4056	Hazardous material recovery, 85 gal, open head	None
Steel drum with bung and vent <sup>3</sup>	8110-00-282-2520 <sup>4</sup>	Steel, 5 gal, enamel exterior treatment, spout	PPP-D-704 TY I CL 8
	8110-00-292-9783 <sup>4</sup>	Steel, 18 gauge, 55 gal, with bung and vent, enamel outside surface treatment	DOT 17E PPP-D-729 TY 2

Appendix D15-C

HAZARDOUS MATERIAL CONTAINERS

PART 2

SHIPBOARD USED/EXCESS MATERIAL/CONTAINERS:

DESCRIPTION AND SUPPLY DATA

Type	National Stock Number	Item Description	Applicable Specifications (DOT, Mil, Fed) <sup>1</sup>
Steel drum with bung and vent <sup>3</sup>	8110-00-597-2353 <sup>4</sup>	Steel, 16 gauge, 55 gal, with bung and vent, paint exterior surface treatment	DOT 17E PPP-D-729
Plastic liner	8115-00-145-0038 <sup>4</sup>	Liner, polyethylene, 5 gal, to be used with 5-gal steel drum	
Plastic drum	Not available	Polyethylene, 5 or 55 gal, used to contain AFFF, reusable <sup>2</sup>	

- NOTES:**
1. DOT: Department of Transportation; Mil: Military; Fed: Federal.
  2. This type can be reused only if the drum:
    - a. Is in good condition.
    - b. Is triple rinsed and completely drained before reuse.
    - c. Is properly relabeled.
  3. Container openings specified are for storage of those materials that are characteristically either liquid, semi-solid, or solid. Some materials (for example, silicone compounds) may appear in more than one state, depending upon usage. The choice of openings for containers used to hold those materials shall be made on a case-by-case basis.
  4. EPA-approved container types for packaging liquid PCBs. Suitable containers that meet the DOT specifications: 5, 5B, 6D (with 2S or 2S polyethylene inserts), 17C, and 17E may be used as substitutes. PCBs should be packed in these approved containers with absorbent material such as standard absorbent sweeping compound, NSN 7930-00-209-1272, or Safestep, NSN 7930-01-145-5797 25 lb.



Appendix D15-D

Navy Used Hazardous Material Identification Label

**USED**

SHIP \_\_\_\_\_ WORK CENTER \_\_\_\_\_

NAME OF MATERIAL \_\_\_\_\_

PROCESS IN WHICH MATERIAL USED \_\_\_\_\_

\_\_\_\_\_

ANY KNOWN IMPURITIES \_\_\_\_\_

SPECIAL STOWAGE REQUIREMENTS \_\_\_\_\_

\_\_\_\_\_

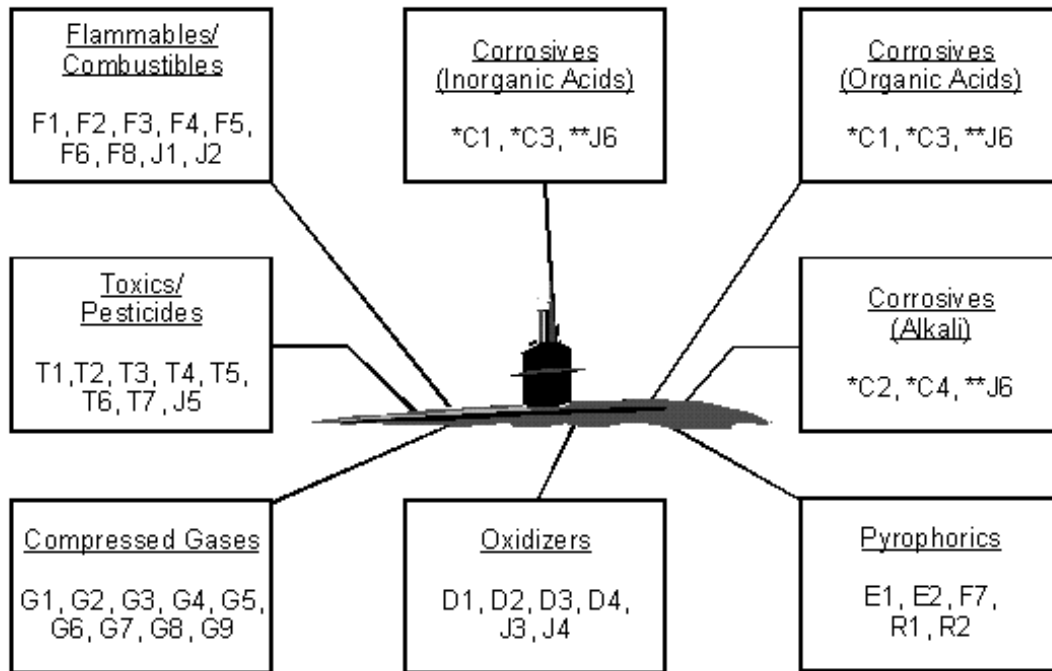
DIVISION OFF. SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**HAZARDOUS MATERIAL**

Appendix D15-E

**HAZARDOUS MATERIAL COMPATIBILITY STORAGE DIAGRAM  
(USING HAZARD CHARACTERISTIC CODE (HCC))**

The Hazardous Characteristic Code (HCC) for each item can be found in the MSDS located in the Submarine Hazardous Material Control List (SMCL).



Instructions:

1. Each block represents a separate stowage location. The codes in the boxes are grouped with other codes with which they are compatible for storage. Generally, materials with different codes will not be stowed together unless specified below:

a. Inorganic acids may be stowed in a flammable liquid storeroom inside a designated locker, separated by at least three feet from all other material.

b. Organic acids may be stowed in a flammable liquid storeroom inside a designated locker, separated by at least three feet from all other material.

NOTES:

\*C1, C3 - HM identified with the C1 or C3 code may be either an inorganic or an organic acid. See page D15-E-2 for examples of inorganic and organic acids.

\*\* J6 - HM identified with J6 may be an inorganic acid, organic acid, or alkali. See page D15-E-2 for examples of inorganic/organic acids and alkalis.

**Appendix D15-E**

**ACID AND ALKALI EXAMPLES**

The table below lists common examples of inorganic acid, organic acid, and alkali. Acids identified with the HCC code C1 or C3 may be either inorganic or organic, check carefully before storing. HM items with HCC code J6 may be an inorganic acid, an organic acid, or a alkali; check carefully before storing.

Inorganic acid (C1, C3, J6)	Organic acid (C1, C3, J6)	Alkali (C2, C4, J6)
Alodine Aqua fortis Boric acid Chromic acid Hydrochloric acid Hydrofluoric acid Muriatic acid Nitric acid Oil of Vitriol (sulfuric acid) Orthotolidine solution Phosphoric acid Sodium bisulfate Sulfamic acid Sulfuric acid	Acetic acid Citric acid Cresol Cresylic acid Glacial acetic acid Oxalic acid Sulfosalicylic acid Trichloroacetic acid Vinegar	Ammonia Ammonium hydroxide Barium hydroxide Calcium hydroxide Caustic soda Caustic potash Diethylenetriamine Lithium hydroxide Monoethanolamine Morpholine Potassium carbonate Potassium hydroxide Soda lime Sodium sulfide Sodium hydroxide Sodium metasilicate Sodium phosphate Sodium silicate Sodium hypochlorite Tetraethylenepentamine

R 050809Z MAR 97

FM COMNAVSUPSYSCOM MECHANICSBURG PA//42//

UNCLAS

MSGID/GENADMIN/COMNAVSUPSYSCOM/MECH PA/424//

**SUBJ/CONSOLIDATED HAZARDOUS MATERIAL REUTILIZATION AND INVENTORY  
/MANAGEMENT PROGRAM (CHRIMP) AND HAZARDOUS INVENTORY CONTROL SYSTEM  
/(HICS) INFORMATION BULLETIN//**

POC/PAUL MURPHY/-/NAVSUP 4242/MECH PA/TEL:717-790-6849

/TEL:DSN 430-6849

RMKS/THE FOLLOWING INFORMATION IS PROVIDED TO APPRISE THE FLEET  
COMMANDERS AFLOAT COMMUNITY OF THE CONTINUING ACTIONS TO SUSTAIN AND  
MAINTAIN CHRIMP OPERATIONS IN SHIPS. IN ADDITION TO PROVIDING  
INFORMATION ON CURRENT AND FUTURE INITIATIVES, VARIOUS SECTIONS BELOW  
ADDRESS ISSUES THAT HAVE SURFACED AS OBSTACLES TO CHRIMP CONTINUITY.

A. CHRIMP/HICS ASSISTANCE PROGRAM (CHAP) TEAMS – TWO NAVSUP CONTRACTOR  
TEAMS ARE NOW FULLY TRAINED AND OPERATIONAL. CHAP TEAMS ARE AVAILABLE FOR  
SHIP VISITS DURING CONUS INPORT PERIODS OR WHEN DEPLOYED. CHAPS ARE HICS  
EXPERTS AND AVAILABLE TO CONDUCT ONBOARD ASSISTS, ESTABLISH OR REORGANIZE A  
HAZMIN CENTER. TYCOMS AND ISICS, WORKING WITH HAZARDOUS MINIMIZATION  
PROGRAM OFFICES (HMPOS) WILL COORDINATE SCHEDULES AND PRIORITIES FOR CHAP  
TEAMS. DIRECT CONTACT WITH HMPOS FOR EMERGENCY ASSISTANCE IS ENCOURAGED.  
HMPO POCs ARE:

HMPO EAST:

PAUL STEWART, DSN 564-3251 OR COM 757-444-3234/3251

HMPO WEST:

CONNIE WATTS, DSN 526-6122/5026 OR COM 619-556-6122.

B. HICS SUPPORT OFFICE – THE ONBOARD SOFTWARE USED WITH AFLOAT  
HAZMAT INVENTORY CONTROL IS SUPPORTED BY THE HICS SUPPORT OFFICE AT NAVICP,  
MECHANICSBURG, PA, DSN: 430-3480, COM 717-790-3480. HICS HOTLINE IS 1-800-237-8349.

(1) HICS 4.2 – HICS VERSION 4.2 SOFTWARE WAS RELEASED IN APRIL 1996.

THE HICS USERS GUIDE DATED AUGUST 1996, WAS MAILED TO ALL HICS ADDRESSEES IN  
SEPTEMBER/OCTOBER 1996. ALL SHIPS, FFG AND ABOVE, SHOULD HAVE RECEIVED THE NEW  
SOFTWARE AND USERS GUIDE. SOME SHIPS STILL UTILIZE EARLIER VERSIONS OF HICS (E.G.,  
3.4 OR 4.0). IN ORDER TO STANDARDIZE CHRIMP CAPABILITIES THROUGHOUT THE FLEET  
ALL SHIPS SHOULD UPGRADE TO THE PRODUCTIVITY ENHANCING VERSION 4.2. HICS 4.2  
REQUIRES ABOUT THE SAME COMPUTER CAPACITY AND HAS RECEIVED HIGH PRAISE FROM  
USERS. THOSE THAT MUST CONVERT FROM V. 3.4 MUST STEP-UP THROUGH V 4.0 BEFORE  
INSTALLING HICS V.4.2. HELP FOR THIS CAN BE PROVIDED AT THE OFFICES CITED ABOVE.  
TYPICAL INSTALLATION/UPGRADE TIMES RANGE FROM 3 MINUTES TO 30 MINUTES  
DEPENDING ON EXISTING DATA FILE SIZES. IF ACTIVITIES HAVE NOT RECEIVED THE V. 4.2  
SOFTWARE, USERS GUIDE, OR DO NOT HAVE 4.0 DISKS, OR REQUIRE ADDITIONAL  
ASSISTANCE, CONTACT THE HICS SUPPORT OFFICE AT 1-800-237-8349 OR 717-790-1474/3475 OR  
THE HMPOS AT THE PHONE NUMBERS IN PARA 1A.

C. JANUS 2010 AND 9440 BAR CODE TRACKERS (TRAKKER) – IF USED AND MAINTAINED  
PROPERLY, THE TRACKER IS A GREAT PRODUCTIVITY ENHANCER (USED TO TRACK,  
INVENTORY AND RETURN CONTAINERS). IT IS ESSENTIAL THAT THE PORTABLE TRACKING  
DEVICES (JANUS 2010 OR 9440 TRAKKER) RETAIN A CONSTANT CHARGE BY PLUGGING THE  
DEVICE INTO THE DOCKING STATION OR THE POWER SUPPLY WHEN NOT IN USE. THIS

ENSURES THE INTERNAL BATTERY IS CHARGED. IF NEGLECTED, THE BATTERY WILL DISCHARGE OVER A PERIOD OF TIME, RENDERING THE DEVICE UNUSABLE AND REQUIRE THE TRACKER BE SENT BACK TO THE MANUFACTURER, INTERMEC, FOR BATTERY REPLACEMENT.

(1) CAUTION WHEN DOWNLOADING FROM TRACKER – WHEN DOWNLOADING INVENTORY INFORMATION FROM THE TRACKING DEVICES, HICS WILL COMPLETELY OVERWRITE ALL THE INVENTORY LOCATION/QUANTITY INFORMATION FOR THAT SPECIFIC NSN/CAGE, IF YES IS SELECTED. TO ENSURE CORRECT INVENTORY LOCATION/QUANTITIES WHEN USING THE TRACKER TO UPDATE ONE LOCATION QUANTITY FOR AN NSN/CAGE YOU MUST ALSO UPDATE ALL OTHER LOCATION/QUANTITIES FOR THAT NSN/CAGE.

(2) IF ALPHA CHARACTERS ARE USED FOR MATERIAL LOCATIONS THE TRACKER DOWNLOAD WILL PLACE THEM IN THE LOCATIONS BY ALPHABETICAL ORDER (I.E. A-LOCATION 1, B-LOCATION 2, C-LOCATION 3, ETC.). RECOMMEND SHIPS USE THE TRACKER FOR INITIAL STAND UP OF THE HAZMIN CENTER. FROM THAT TIME ON, PRINT THE MASTER INVENTORY LIST REPORT... CHECK IT AGAINST YOUR PHYSICAL INVENTORY...THEN GO INTO UPDATE MATERIALS TO ADJUST QUANTITIES, OR, USE THE TRANSACTION EXCEPTION REPORT TO ASJUST LOCATIONS OR QUANTITIES. IF TRACKING DEVICES ARE USED FOR CONTAINER TRACKING (AND THEY SHOULD BE) AND DLOWNLOADED INTO HICS YOUR COST AVOIDED MATERIAL WILL BE PUT INTO THE FIRST LOCATION, I.E. 1 OR A, OR WHATEVER.

D. BACK-UP FILES – IT IS IMPORTANT (CRITICAL) TO MAKE A DAILY BACKUP COPY OF THE HICS DATA FILES. POWER OUTAGES, POWER SURGES OR SYSTEM FAILURES MAY CORRUPT YOUR HICS DATA BASES. RECOMMEND USE SEPARATE SETS OF BACKUP DISKS EACH DAY TO ELIMINATE CORRUPTION OF YOUR DATA FILES. RECOMMEND USING A 5 DAY ROTATION OF THE DISKS, IN OTHER WORDS, SHIPS NEED 5 COMPLETE SETS OF BACKUP DISKS. FOR EXAMPLE, THIS ROUTINE WOULD ALLOW SHIPS TO BACKUP 6 JAN DATA WITH THE 1 JAN DISKS, ETC., KEEPING A SUCCESSIVE FIVE DAY HISTORY OF BACKED UP DATA. OTHER BACKUP SOFTWARE MAY BE USED WHEN BACKING UP YOUR HICS PROGRAM (I.E. COLORADO BACK-UP, PKZIP, ETC.) NAVSUP IS CURRENTLY RESEARCHING OTHER BACK-UP TOOLS.

E. AN UNINTERRUPTIBLE POWER SOURCE (UPS) TO ASSURE CONTINUITY OF CHRIMP OPERATIONS WITH HICS IS ESSENTIAL. TWO MODELS ARE APPROVED AS ELECTRICALLY SAFE FOR SHIPBOARD USE. “SMART-UPS” MODELS SU900 (NSN 9G 6130-01-408-5551), AND SU1250 (NSN 9G 6130-01-387-0635), WITH THE LABLE PLATE X-93 OPTION DESIGNATION PASSED THE ELECTRICAL SAFETY EVALUATION BY NSWCCD-SESS (CODE 9344) (PH DSN: 443-1180). REQ ISIC ADVISE HMPO-E AND HMPO-W OF THE NUMBER OF UPSS REQUIRED FOR SHIPS. AS A MINIMUM ALL HICS COMPUTERS SHOULD HAVE A SURGE SUPPRESSER WHICH CAN BE PROCURED BY REQUISITIONING (USUALLY IN SERVMART) NSN 6150-01-362-7192.

F. QUICK REVIEW OF IMPROVEMENTS ALLOWED BY HICS 4.2.

(1) TO VIEW THE CHANGES/BUG FIXES PROVIDED IN HICS V.4.2, WHILE IN HICS, PRESS THE ALT “B” KEY. TO VIEW THE HICS POINTS OF CONTACT AND TELEPHONE NUMBERS FOR TECHNICAL SUPPORT, PRESS THE ALT”A” KEY. ALSO, HICS V.4.2 WILL ALLOW YOU TO SET 4 DIFFERENT HOT KEYS. TO ACCESS THIS FUNCTION PRESS THE ALT “F10” KEY. THIS FUNCTION WILL ALLOW THE ACCESS OF THE CD ROM HMIS SYSTEM WITHOUT LEAVING THE HICS PROGRAM, OR ENABLE A USER TO GO TO THE DOS PROMPT AND THEN GO BACK TO THE HICS PROGRAM TO THE SAME SCREEN YOU WERE ON. IF IN A DOS COMMAND, YOU MUST TYPE “EXIT” TO RETURN TO HICS SCREEN YOU WERE ON.

(2) HICS 4.2 WILL ALLOW YOU TO ISSUE COST OR COST AVOIDED MATERIAL. WHEN ISSUING MATERIAL TO CUSTOMERS, THE V 4.2 SOFTWARE HAS COST AVOIDED HIGHLIGHTED AND ONLY REQUIRES PRESSING THE ENTER KEY TO SELECT COST AVOIDED MATERIAL. (SEE SECTION 5, PAGE 5-7 D OF THE HICS USERS GUIDE).

G. DELAYING ANY FURTHER HICS RELEASES – THE NEXT HICS SOFTWARE RELEASE WILL INCLUDE RECOMMENDED CHANGES AND ENHANCEMENTS IDENTIFIED BY THE USERS (THROUGH USER GROUPS MEETINGS AND OTHER MEANS) AND APPROVED BY THE HICS CONFIGURATION CONTROL BOARD. THIS RELEASE HAS BEEN TENTATIVELY SCHEDULED FOR LATE FY 97. ONCE HICS VER 4.2 HAS BECOME WIDELY USED AND ACCEPTED, FEEDBACK WILL DRIVE REQUIRED CHANGES FOR NEXT UPDATE.

H. HAZTEC – NAVSUP HAS DEVELOPED A NEW HICS MODULE IN CONJUNCTION WITH NSW D SHIPSYSENGSTA PHIL. THE HAZARDOUS MATERIAL TRACKING AND ENVIRONMENTAL COMPLIANCE (HAZTEC), WILL AUTOMATE THE TRACKING AND DOCUMENTATION FOR OFF-LOADING “USED” HAZMAT. HAZTECH WILL BE BETA TESTED IN TYCOM DESIGNATED SHIPS DURING THE SPRING OF 1997. IF SUCCESSFUL, HAZTEC WILL BE INCLUDED IN THE HICS UPDATE NOTED ABOVE.

I. HMPOS ARE WORKING WITH TYCOMS IN ESTABLISHING HICS USER GROUPS. NO FIRM SCHEDULE HAS BEEN IDENTIFIED. THE USER GROUPS ARE AN OPEN FORUM FOR HICS USERS TO RELAY FEEDBACK IN A GROUP SETTING. INFORMATION SHARED WILL FACILITATE OVERALL USER/TEAM AWARENESS OF HICS CAPABILITIES AND RECOMMEND IMPROVEMENTS TO HICS CONTACT HMPOS FOR DATES AND LOCATIONS.

J. OVERLOADING HICS COMPUTER – LOADING OF UNRELATED SOFTWARE IS REDUCING HICS PERFORMANCE. RECOMMEND ALL SOFTWARE UNRELATED TO HICS BE REMOVED FROM HICS PCS.

K. CHRIMP HICS WORKSHOPS – CHRIMP/HICS WORKSHOPS (3 DAYS LONG) ARE HELD MONTHLY IN NORFOLK AND SAN DIEGO. TO REGISTER FOR WORKSHOPS, CONTACT NAVOSHENVTRACEN AT DSN 565-8778 OR (757) 445-8778X324. WORKSHOPS ARE CONDUCTED AT NAVOSHENVTRACEN FACILITIES AT NAS NORFOLK AND NAS NORTH ISLAND. ATG WESTPAC-YOKOSUKA IS DEVELOPING THE CAPABILITY TO TEACH THIS COURSE AND WILL BE READY TO TEACH IN THE FIRST QUARTER OF CY 1997. THE DATES AND LOCATIONS FOR THE REGULARLY SCHEDULED WORKSHOPS ARE AS FOLLOWS:

04-07 MAR, NORFOLK, VA  
25-28 MAR, SAN DIEGO, CA  
08 -11 APR, NORFOLK, VA  
15-18 APR, SAN DIEGO, CA  
06-09 MAY, NORFOLK, VA  
13-16 MAY, SAN DIEGO, CA  
03 - 06 JUN, NORFOLK, VA  
24-27 JUN, SAN DIEGO, CA  
15-18 JUL, SAN DIEGO, CA  
29 JUL - 01 AUG, NORFOLK, VA  
12-15 AUG, SAN DIEGO, CA  
26 - 29 AUG, NORFOLK, VA  
09 -12 SEP, NORFOLK, VA  
23-26 SEP, SAN DEIGO, CA

2. NAVSUP POC: PAUL MURPHY, SUP 4242, DSN 430-6849, COMM 717-790-6849, FAX 6903, EMAIL: PAUL(UNDERSCORE)MURPHY(AT SIGN) NAVSUP.NAVY.MIL/

BT

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UU  
U-UNCLASSIFIED--UNCLASSIFIED-U  
UU

RTAUZYUW RUENAAA7603 3421720-UUUU--RULSSEA.

ZNR UUUUU

R 081640Z DEC 98 ZYB PSN 765678M39

FM CNO WASHINGTON DC//N45//

TO RUCBCLF/CINCLANTFLT NORFOLK VA//N41/N46//

RHHMHAH/CINCPACFLT PEARL HARBOR HI//N41/N46//

RULSAMX/COMNAVSUPSYSCOM MECHANICSBURG PA//424//

RULSSEA/COMNAVSEASYSYSCOM WASHINGTON DC//00T/03//

RULSADK/COMNAVFACENGCOM WASHINGTON DC//IES/ENV//

INFO RULSAMS/NAVICP MECHANICSBURG PA//05//

RULSBMS/NAVSURFWARCEN SHIPSYSENGSTA PHILADELPHIA PA//631//

RULSADY/NAVSURFWARCEN CARDEROCKDIV BETHESDA MD//632//

RUCOSSA/COMNAVAIRLANT NORFOLK VA//N41/N45//

RUWFEEA/COMNAVAIRPAC SAN DIEGO CA//N41/N45//

RUCBTFA/COMNAV SURFLANT NORFOLK VA//N41/N45//

RUWDEAA/COMNAV SURFPAC SAN DIEGO CA//N41/N46//

RUCBKMC/COMSUBLANT NORFOLK VA//N41/N451//

RHHMDBA/COMSUBPAC PEARL HARBOR HI//N41/N45//

BT

UNCLAS //N05100//

MSGID/GENADMIN//

**SUBJ/HAZARDOUS MATERIAL (HM) OFFLOAD STANDARDIZATION//**

REF/A/MSG CNO/R 081902Z/-/OCT 98//

REF/B/DOC CNO/19 JAN 94/-//

REF/C/MTG HMAP CONF/SAN DIEGO CA/-/31MAR-2/APR98//

REF/D/DOC CNO/02 FEB 98/-//

NARR/REF A SCHEDULED A MEETING OF INTERESTED PARTIES TO DETERMINE STANDARD SHIP-TO-SHORE HM OFFLOAD REQUIREMENTS. REF B IS OPNAVINST 5100.19C, CHAPTER B3, WHICH PROVIDES GUIDANCE ON HM PACKAGING, LABELING AND DOCUMENTATION FOR TRANSFER ASHORE. REF C DISCUSSED NEED TO CONVENE DECISION-MAKING GROUP TO DETERMINE STANDARD HM OFFLOAD DOCUMENTATION BETWEEN PORTS FOR NAVY SHIPS. REF D IS OPNAVINST 5090.1B (CH1) CHAPTER 12, WHICH PROVIDES GUIDANCE TO SHORE ACTIVITIES RECEIVING HM FROM SHIPS.//

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RMKS/1. REF A SCHEDULED A MEETING OF FLEET AND SHORE ACTIVITY REPRESENTATIVES TO DETERMINE AND FINALIZE STANDARD HM OFFLOAD DOCUMENTATION REQUIREMENTS FOR SHIPS. THE MEETING CONVENED ON THURSDAY, 15 OCT 98 AT CNO N45. ALL ADDEES WERE INVITED TO ATTEND IN PERSON OR BY VIDEO-TELECONFERENCING.

2. BACKGROUND. NAVSUPSYSCOM AND CARDEROCK DIVISION, NAVAL SURFACE WARFARE CENTER, SHIP SERVICE ENGINEERING STATION DEVELOPED AN HM OFFLOAD MODULE FOR THE HAZARDOUS MATERIAL INVENTORY CONTROL SYSTEM (HICS). THIS MODULE GENERATES THE OFFLOAD DOCUMENTATION REQUIRED BY REF B. HOWEVER, AS DISCUSSED DURING REF C AND PRIOR HMAP STEERING COMMITTEE MEETINGS, HM OFFLOAD REQUIREMENTS FOR SHIPS OFTEN DIFFER BETWEEN NAVY PORTS OR EVEN BETWEEN DIFFERENT NAVY ACTIVITIES IN THE SAME PORT DESPITE CLEAR GUIDANCE SET FORTH IN REF D. THESE DIFFERENCES IN REQUIRED DOCUMENTATION MAY HINDER SHIPS' ABILITY TO USE EFFECTIVELY THE HICS OFFLOAD MODULE UPON FLEET INTRODUCTION. STANDARDIZATION OF HM OFFLOAD REQUIREMENTS WILL ALSO REDUCE SHIPBOARD WORKLOAD AND PROVIDE SHIPS WITH CLEAR, SAFE AND COMPLIANT GUIDANCE TO FOLLOW WHEREVER THEY OPERATE.

3. DURING 15 OCT 98 MEETING, ATTENDEES DISCUSSED VARIOUS ALTERNATIVES ADDRESSED IN REF A. ECHELON 2 REPRESENTATIVES PRESENT CONCURRED THAT THE NAVY SHOULD PURSUE THE OPTION IN WHICH ALL NAVY PORT FACILITIES WILL REQUIRE ONLY THE DOCUMENTATION CURRENTLY SPECIFIED BY REFS B (PARA B0307C) AND D (PARA 12-5.2.1). THESE REQUIREMENTS ARE: HM PROPERLY PACKAGED AND SECURED IN THE ORIGINAL CONTAINER OR A CONTAINER SPECIFIED FOR THE MATERIAL IN APPENDIX B3-D OF REF B; PACKAGE PROPERLY LABELED WITH USED HM LABEL (INCLUDING PAGE INFORMATION ON PROCESS IN WHICH MATERIAL WAS USED, ANY KNOWN IMPURITIES, AND SPECIAL STORAGE REQUIREMENTS); A PROPERLY FILLED OUT DD 1348-1; AND AN MSDS, IF MATERIAL ORIGINATED OUTSIDE THE SUPPLY SYSTEM OR MSDS IS UNAVAILABLE IN HMIS (OVERSEAS ACTIVITIES MAY REQUIRE MSDS BECAUSE HMIS IS NOT AVAILABLE TO PROCESSING CONTRACTORS).

4. ACTION ADDEES SHALL ADVISE SUBORDINATE COMMANDS AND ACTIVITIES THAT REQUIREMENTS OF REFS B AND D SHOULD BE SPECIFICALLY FOLLOWED FOR PROCESSING ALL TRANSFERS OF USED/EXCESS HM FROM SHIPS TO SHORE ACTIVITIES. ACTION ADDEES SHALL ADVISE SUBORDINATE SHORE ACTIVITIES THAT RECEIVE SHIPBOARD HM TO TAKE APPROPRIATE ACTION FOLLOWING HM RECEIPT TO ENSURE COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS. EFFICIENCY AND COST REDUCTION EFFORTS BY SHORE ACTIVITIES IN THIS OPERATION WILL NOT PLACE ANY ADDITIONAL BURDEN ON SHIPS FORCE PERSONNEL BEYOND THE REQUIREMENTS OF REFS B AND D.

5. THE HM OFFLOAD MODULE REFERRED TO IN PARA (2) CAN BE INTEGRATED INTO THE EXISTING DOS-BASED VERSION OF HICS. THE MODULE CAN BE MADE AVAILABLE ONLY TO LARGE DECK SHIPS (L-SERIES, CV AND CVN) WHEN REQUESTED THROUGH FLTCINCS AND IN COORDINATION WITH SUPSYSCOM. A MICROSOFT WINDOWS VERSION OF HICS, CONTAINING AN HM OFFLOAD MODULE WILL BE AVAILABLE IN THE FUTURE.//

BT

#7603

NNNN



00T ....ACT FOR COMNAVSEASYSCOM

03 03M 04L1 04L3 04L32 04XI PMS312 PMS378P PMS378ED PMS378E1  
PMS378C2 PMS378A1 PMS387E 00C 03D 3D4MED 03F 03J 03R 03U  
03V 04M3 08 91K17 91K44 92L PMS308 PMS333

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FM COMNAVSEASYS COM WASHINGTON DC//03M//

UNCLAS //NO9631//

MSGID/GENADMIN/COMNAVSEASYS COM 03M//

**SUBJ/NAVSEA-APPROVED NESHAP-COMPLIANT COATINGS//**

REF/A/DOC/NSTM 631, VOLUME 1//

REF/B/DOC/NSTM 631, VOLUME 3//

NARR/REF A NAVAL SHIPS' TECHNICAL MANUAL 631 (NSTM 631) VOLUME 1, S9086-VD-STM-010/CH-631, PRESERVATION OF SHIPS IN SERVICE - GENERAL, REVISION 1, DATED 19 DEC 1996  
REF B NAVAL SHIPS' TECHNICAL MANUAL 631 (NSTM 631) VOLUME 3, S9086-VD-STM-030/CH-631, PRESERVATION OF SHIPS IN SERVICE - SURFACE SHIP/SUBMARINE APPLICATIONS  
POC/MR JAMES RUDROFF/CIV/NAVSEASYS COM 03M1/WASHINGTON DC/ TEL(703) 602-0216, X-226/TEL DSN 332-0216, X-226 FAX 703-602-0247//

RMKS/1. THIS MSG PROVIDES GUIDANCE ON NAVSEA-SPECIFIED PAINTS AND COATINGS AUTHORIZED FOR SHIPBOARD USE. THE NAVSEA-SPECIFIED REQUIREMENTS FOR VOLATILE ORGANIC COMPOUND (VOC) CONTENT LIMITS FOR THE PAINTS AND COATINGS LISTED BELOW COMPLY WITH THE VOC REQUIREMENTS OF THE NATIONAL EMISSIONS STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) FOR SHIPS. THIS MESSAGE MAY SERVE AS A REFERENCE GUIDE FOR CURRENTLY APPROVED NAVSEA PAINTS FOR SHIPBOARD USE AND CORRESPONDING VOC CONTENT IN SUPPORT OF FIELD INSPECTIONS AND RECORDKEEPING ACTIVITIES RELATED TO SHIP NESHAP COMPLIANCE. APPLICATION DESCRIPTION AND CORRESPONDING NSNS ARE ALSO PROVIDED WITH EACH MILSPEC AND VOC CONTENT FOR EACH APPROVED PAINT. IT MUST BE EMPHASIZED THAT USE OF PAINTS (FSC 8010 ITEMS) NOT ON THE FOLLOWING LIST IS STRICTLY PROHIBITED. USE OF PROHIBITED PAINTS WILL RESULT IN PERFORMANCE DEGRADATION AND ENVIRONMENTAL NOTICE OF VIOLATION (NOV) AND SUBJECT THE USING ACTIVITY TO FINES.

2. THE FOLLOWING TABLE SUMMARIZES THE DATA IN TERMS OF THE LATEST SPECIFICATION, PAINT USE, VOC AND SPECIALIZED USE CATEGORY, AS APPLICABLE, AND SHALL BE USED TO SUPPLEMENT REF A, TABLE 631-3-7.

CURRENT SPECIFICATION	WHAT THE PAINT IS AND WHERE THE PAINT IS USED	VOC IN GRAMS/L (NOTE 1)	SPECIAL USE CATEGORY
MIL-P-24441* TYPES III AND IV	GENERAL PURPOSE EPOXY ANTI-CORROSIVE USED THROUOUT THE SHIP	LESS THAN 340	G,S9,S17,S20
MIL-PRF-23236* ALL TYPES, CLASSES, AND GRADES	EPOXY ANTICORROSIVE TANK PAINT, SOME WITH "EDGE WRAP" FEATURE%	LESS THAN 340	G, S9, S20, S22
MIL-PRF-24635*	EXTERIOR SEMI-GLOSS SHADES OF GRAY; INTERIOR/EXTERIOR GLOSS MARKING AND STRIPING COLORS	LESS THAN 340	S5, S8, S18
TT-P-645B**	GENERAL PURPOSE, SINGLE COMPONENT ALKYD ANTICORROSIVE	LESS THAN 340	G
MIL-PRF-24647* (NOTE 2)	SHIPBOTTOM ANTICORROSIVE AND ANTIFOULING SYSTEMS%	LESS THAN 400	S3
MIL-PRF-24667* (NOTE 3)	NON-SKID COATING LIKE THOSE USED ON FLIGHT AND HELO DECKS	LESS THAN 340	S8, S11
TPD-24607**	FIRE RETARDANT, INTERIOR ENAMEL, WHITE, GREEN, GRAY AND 8 OTHER COLORS	LESS THAN 340	S19
TPD-1000*	HEAT RESISTANT, ALUMINUM PIGMENTED, SILICONE ENAMEL	LESS THAN 420	S4, S17

TT-P-28	HIGH TEMPERATURE RESISTANT ALUMINUM PIGMENTED SILICONE ENAMEL	LESS THAN 500	S4, S6, S17
MIL-DTL-15090**	EQUIPMENT ENAMEL, FORMULA 111, CAN BE USED IN SEA 08 COG AREAS	LESS THAN 340	S12, S19
MIL-DTL-1115**	FORMULA 30, BULKHEAD ENAMEL FOR USE ONLY IN SEA 08 COG AREAS	LESS THAN 340	S12, S19
MIL-DTL-700**	FORMULA 20L, LIGHT GRAY DECK ENAMEL FOR USE ONLY IN SEA 08 COG AREAS	LESS THAN 340	S12, S18, S19
MIL-P-15931*	VINYL, UNDERWATER ANTIFOULING PAINT FOR LIMITED (2 YR) LIFE	LESS THAN 400	S3
DOD-P-24631** AND TPD-24631	FLEXIBLE EPOXY/POLYURETHANE PAINT WHICH MAY BE USED ON SUBMARINE EXTERIOR	LESS THAN 340	S8, S16
DOD-P-24648*	INORGANIC/ORGANIC ZINC RICH PRIMERS WHICH MAY BE USED ON EXTERIOR STEEL	LESS THAN 340	G, S4
MIL-PRF-24763*	WATER BASED EXTERIOR ACRYLIC TOPSIDE PAINT IN THE SAME SHADES OF GRAY AS MIL-PRF-24635; AND COLORS	LESS THAN 340	S5, S8, S18
DOD-C-24596*	FIRE RETARDANT INTERIOR PAINT IN HABITABILITY COLORS	LESS THAN 340	S19
MIL-PRF-19565***	INTERIOR VAPOR BARRIER PAINT APPLIED OVER INSULATION	LESS THAN 340	G, S19
MIL-PRF-46081*	INTERIOR EPOXY INTUMESCENT, FIRE PROTECTIVE PAINT	LESS THAN 340	S19
ANTI-SWEAT PAINT***	USE COMMERCIAL PRODUCT - HEMPEL PAINT CO., "ANTICONDENS 617US"	LESS THAN 340	G
ANCHOR CHAIN PAINT# (NOTE 4)	USE COMMERCIAL PRODUCT - AMERON "PSX 700" - VARIOUS COLORS	LESS THAN 340	G

**NOTE 1** - THESE PAINTS SHALL BE USED AS SUPPLIED. NO SOLVENT OF ANY KIND SHALL BE USED TO ALTER THE PROPERTIES OF THE PAINT. A CONSPICUOUS "NO THINNING" POLICY SHALL BE DISPLAYED IN A PROMINENT LOCATION AT EACH PAINT ISSUE STATION.

**NOTE 2** - THE ONLY BOOTTOP PAINT AUTHORIZED FOR USE IS THE BLACK ANTIFOULING PAINT QUALIFIED TO MIL-PRF-24647. REFER TO REF B, TABLE 631-8-10, NOTE 1 AND TABLE 631-8-11, NOTE 2.

**NOTE 3** - COLOR TOPPING OF NON-SKID IS NOT AUTHORIZED EXCEPT FOR AIR OPERATIONS AND THEN ONLY IN ACCORDANCE WITH PROCEDURES SPECIFIED IN NSTM CHAPTER 634, DECK COVERING.

**NOTE 4** - THE ONLY PAINTS AUTHORIZED FOR ANCHORS AND ANCHOR CHAINS ARE LISTED IN REF B, TABLE 631-8-9 AND NOTE 21 TO THE TABLE. ASPHALT VARNISH IS NO LONGER APPROVED FOR ANCHOR CHAINS. IF TOUCH-UP OF EXISTING BLACK ASPHALT VARNISH IS REQUIRED USE BLACK AMERON PSX 700. SEE TABLE 631-3-6.

#### **SPECIAL USE COATING CATEGORIES**

CATEGORY	USE	MAX VOC IN GRAMS/L
G	GENERAL USE COATING	340
S1	AIR FLASKS	340
S2	ANTENNA	530
S3	ANTIFOULING	400
S4	HEAT RESISTANT	420
S5	HIGH-GLOSS	420

S6	HIGH TEMPERATURE	500
S7	INORGANIC ZINC-HIGH BUILD	340
S8	MILITARY EXTERIOR	340
S9	MIST COAT	610
S10	NAVIGATIONAL AIDS	550
S11	NONSKID	340
S12	NUCLEAR	420
S13	ORGANIC ZINC	360
S14	PRETREATMENT WASH PRIMER	780
S15	REPAIR/MAINT OF THERMO-PLASTICS	550
S16	RUBBER CAMOUFLAGE	340
S17	SEALANT FOR THERMAL SPAY ALUMINUM	610
S18	SPECIAL MARKING	490
S19	SPECIALTY INTERIOR	340
S29	TACK COAT	610
S21	UNDERSEA WEAPONS SYSTEMS	340
S22	WELD THROUGH PRECONSTRUCTION PRIMERS	650

\* - NESHA VOC CONTENT VERIFIED AS PART OF QUALIFICATION REQUIREMENT

\*\* - NESHA VOC CONTENT GENERATED AND VERIFIED DURING NAVSEA FUNDED TECHNICAL REFORMULATION TO COMPLY WITH NESHA REGULATIONS.

\*\*\* - WATER BASE SPECIALTY PAINTS WITH NO VOC

# - MANUFACTURER'S DATA SHEET CERTIFICATION THAT VOC CONTENT COMPLIES TO NESHA  
% - THESE PRODUCTS ARE FOR USE BY INDUSTRIAL ACTIVITIES AND ARE PROCURED DIRECTLY FROM VENDORS LISTED ON CURRENT QUALIFIED PRODUCTS LISTS (QPL). QPL CONTAINS ONLY NESHA COMPLIANT SUPPLIERS.

3. NAVSEA APPROVED MARINE COATINGS FOR SHIPBOARD APPLICATION CAN BE PROCURED DIRECTLY FROM A QUALIFIED MANUFACTURER, THROUGH THE GENERAL SERVICES ADMINISTRATION (GSA) OR FROM THE NAVAL SUPPLY SYSTEM COMMAND (NAVSUP) PROVIDED THE APPLICABLE NATIONAL STOCK NUMBER IS CITED IN THE PROCUREMENT ORDER.

4. THE FOLLOWING TABLE LISTS NSNS FOR NESHA-COMPLIANT SHIPBOARD PAINTS IN AVAILABLE COLORS AND CONTAINER SIZES.

CURRENT SPECIFICATION	CONTAINER SIZE	COLOR (FED STD 595 IF APPLICABLE)	NATIONAL STOCK NUMBERS
<b>MIL-P-24441</b>			
TYPE III, F.150	2-QUART KIT	GREEN (24272)	8010-01-347-0916
	2-GALLON KIT		8010-01-350-4742
	10-GALLON KIT		8010-01-302-3608
TYPE III, F.151	2-GALLON KIT	HAZE GRAY (26270)	8010-01-350-4741
	10-GALLON KIT		8010-01-302-6838
TYPE III, F.152	2-GALLON KIT	WHITE (27886)	8010-01-350-4743
	10-GALLON KIT		8010-01-302-3606
TYPE III, F.153	2-GALLON KIT	BLACK	8010-01-350-4744
	10-GALLON KIT		8010-01-302-3604
TYPE III, F.154	2-GALLON KIT	DARK GRAY	8010-01-350-6256
	10-GALLON KIT		8010-01-302-3605
TYPE III, F.155	2-GALLON KIT	GRAY NO.6	8010-01-365-8842
	10-GALLON KIT		8010-01-302-7058
TYPE III, F.156	2-GALLON KIT	RED (20152)	8010-01-350-4745
	10-GALLON KIT		8010-01-302-3607
TYPE III, F.157	2-GALLON KIT	LIGHT GRAY (26622)	8010-01-368-5447
	10-GALLON KIT		8010-01-302-3609
TYPE IV, F.158	2-GALLON KIT	YELLOW (23695)	8010-01-380-3285
	10-GALLON KIT		8010-01-365-8841

TYPE IV, F.150	2-GALLON KIT	GREEN (24272)	8010-01-380-2362
	10-GALLON KIT		8010-01-380-2389
TYPE IV, F.151	2-GALLON KIT	HAZE GRAY (26270)	8010-01-380-2435
	10-GALLON KIT		8010-01-380-2388
TYPE IV, F.152	2-GALLON KIT	WHITE (27886)	8010-01-380-2448
	10-GALLON KIT		8010-01-380-2343
TYPE IV, F.153	2-GALLON KIT	BLACK	8010-01-380-2375
	10-GALLON KIT		8010-01-380-2456
TYPE IV, F.154	2-GALLON KIT	DARK GRAY	8010-01-380-2359
	10-GALLON KIT		8010-01-380-2390
TYPE IV, F.155	2-GALLON KIT	GRAY NO.6	8010-01-380-2414
	10-GALLON KIT		8010-01-380-2441
TYPE IV, F.156	2-GALLON KIT	RED (20152)	8010-01-380-2345
	10-GALLON KIT		8010-01-380-2383
TYPE IV, F.157	2-GALLON KIT	LIGHT GRAY (26622)	8010-01-380-2408
	10-GALLON KIT		8010-01-380-2434
TYPE IV, F.158	2-GALLON KIT	YELLOW(23695)	8010-01-380-2407
<b>MIL-PRF-24635 GLOSS</b>	1-QUART	BLUE (15044)	8010-01-433-8371
	1-QUART	BLUE (15123)	8010-01-396-6797
	1-QUART	BLUE (15177)	8010-01-433-8372
	1-QUART	BLUE (15182)	8010-01-396-6796
	1-QUART	BLUE (15200)	8010-01-433-8382
	1-QUART	RED (11105)	8010-01-396-6803
	1-QUART	BUFF (10371)	8010-01-396-6804
	1-QUART	LIGHT BUFF (13578)	8010-01-433-8363
	1-QUART	BROWN (10075)	8010-01-433-7737
	1-QUART	ORANGE (12246)	8010-01-433-8361
	1-QUART	GREEN (14110)	8010-01-433-8364
	1-QUART	TAN (10324)	8010-01-433-8367
	1-QUART	GREEN (14449)	8010-01-433-8370
	1-QUART	PURPLE (17142)	8010-01-433-8375
	1-QUART	GRAY (16081)	8010-01-433-8384
	1-QUART	OFF WHITE (17886)	8010-01-433-8385
	1-GALLON	OFF WHITE (17886)	8010-01-433-8380
	1-GALLON	BLUE-WHITE (17875)	8010-01-360-8067
	1-GALLON	BRIGHT WHITE (17925)	8010-01-397-3935
	1-GALLON	GRAY (16081)	8010-01-433-8379
	1-GALLON	GRAY (16187)	8010-01-356-2940
	1-GALLON	EQUIPMENT GRAY (16307)	8010-01-368-7793
	1-GALLON	LIGHT GRAY (16376)	8010-01-375-2175
	1-GALLON	BLACK (17038)	8010-01-350-5239
	1-GALLON	RED (11105)	8010-01-396-6798
	1-GALLON	GREEN (14110)	8010-01-433-8366
	1-GALLON	GREEN (14193)	8010-01-396-6802
	1-GALLON	GREEN (14449)	8010-01-433-8369
	1-GALLON	LIGHT BUFF (13578)	8010-01-433-8368
	1-GALLON	YELLOW (13538)	8010-01-396-6805
	1-GALLON	ORANGE (12197)	8010-01-360-9306
	1-GALLON	ORANGE (12246)	8010-01-433-8381
	1-GALLON	BLUE (15044)	8010-01-433-8374
	1-GALLON	BLUE (15177)	8010-01-433-8377
	1-GALLON	BLUE (15200)	8010-01-433-8373

	1-GALLON	TAN (10324)	8010-01-433-8365
	1-GALLON	BROWN (10075)	8010-01-433-8376
	1-GALLON	PURPLE (17142)	8010-01-433-8388
	5-GALLON	BLUE WHITE (17875)	8010-01-344-6699
	5-GALLON	OFF WHITE (17886)	8010-01-433-8391
	5-GALLON	GRAY (16187)	8010-01-344-6692
	5-GALLON	EQUIPMENT GRAY (16307)	8010-01-344-6704
	5-GALLON	BLACK (17038)	8010-01-344-6695
	5-GALLON	RED (11105)	8010-01-349-9006
	5-GALLON	GREEN (14062)	8010-01-349-9007
	5-GALLON	YELLOW (13538)	8010-01-349-9005
	5-GALLON	BLUE (15123)	8010-01-349-9009
<b>MIL-PRF-24635 SEMI-GLOSS</b>	1-GALLON	BLUE-WHITE (27875)	8010-01-344-5321
	1-GALLON	OFF WHITE (27886)	8010-01-382-1810
	1-GALLON	DARK GRAY (26008)	8010-01-344-5314
	1-GALLON	OCEAN GRAY (26173)	8010-01-344-5316
	1-GALLON	GRAY (26231)	8010-01-356-2941
	1-GALLON	HAZE GRAY (26270)	8010-01-344-5311
	1-GALLON	EQUIPMENT GRAY (26307)	8010-01-344-5317
	1-GALLON	LIGHT GRAY (26373)	8010-01-344-5318
	1-GALLON	LIGHT GRAY (26492)	8010-01-344-5319
	1-GALLON	LIGHT BUFF (23578)	8010-01-356-3685
	1-GALLON	YELLOW (23594)	8010-01-356-2939
	1-GALLON	YELLOW (23655)	8010-01-396-6800
	1-GALLON	YELLOW (23695)	8010-01-365-8834
	1-GALLON	BROWN (20059)	8010-01-365-8832
	1-GALLON	BROWN (20109)	8010-01-344-5312
	1-GALLON	BROWN (20117)	8010-01-382-1896
	1-GALLON	RED (21105)	8010-01-396-6801
	1-GALLON	BLACK (27038)	8010-01-344-5320
	5-GALLON	BLUE WHITE (27875)	8010-01-344-5322
	5-GALLON	OFF WHITE (27886)	8010-01-344-6690
	5-GALLON	DARK GRAY (26008)	8010-01-350-4727
	5-GALLON	OCEAN GRAY (26173)	8010-01-356-8767
	5-GALLON	GRAY (26231)	8010-01-344-6702
	5-GALLON	HAZE GRAY (26270)	8010-01-344-5309
	5-GALLON	EQUIPMENT GRAY (26307)	8010-01-353-9055
	5-GALLON	LIGHT GRAY (26373)	8010-01-356-9905
	5-GALLON	BROWN (20109)	8010-01-344-6700
	5-GALLON	BROWN (20117)	8010-01-344-6693
	5-GALLON	LIGHT BUFF (23578)	8010-01-344-6691
	5-GALLON	YELLOW (23594)	8010-01-344-6694
	5-GALLON	YELLOW (23695)	8010-01-344-6697
	5-GALLON	OLIVE DRAB (24084)	8010-01-344-6698
	5-GALLON	BLACK (27038)	8010-01-344-6701
<b>MIL-PRF-24635 LOW LUSTER</b>	1-GALLON	GRAY (36231)	8010-01-344-5310
	1-GALLON	HAZE GRAY (36270)	8010-01-382-1864
	1-GALLON	GREEN (34097)	8010-01-344-5313
	1-GALLON	RED (31350)	8010-01-396-6799
	1-GALLON	BLACK (37038)	8010-01-356-2938

	5-GALLON	HAZE GRAY (36270)	8010-01-344-6696
	5-GALLON	BLACK (37038)	8010-01-344-6703
	5-GALLON	BLUE WHITE (37875)	8010-01-349-8493
<b>TT-P-645</b>	1-GALLON	YELLOW (33793)	8010-01-285-1329
	5-GALLON	YELLOW (33793)	8010-01-285-1328
<b>MIL-DTL-1115</b>	1-GALLON	WHITE (17886)	8010-01-434-1266
	5-GALLON	WHITE (17886)	8010-01-434-1268
<b>MIL-DTL-15090</b>	1-QUART	EQUIPMENT GRAY (26307)	8010-01-441-5907
	1-GALLON	EQUIPMENT GRAY (26307)	8010-01-441-5909
	5-GALLON	EQUIPMENT GRAY (26307)	8010-01-441-5912
<b>TPD-24607</b>	1-GALLON	ROSEWOOD (22519)	8010-01-344-5086
	5-GALLON	ROSEWOOD (22519)	8010-01-344-5097
	1-GALLON	SAND (22563)	8010-01-344-5085
	5-GALLON	SAND (22563)	8010-01-344-5096
	1-GALLON	YELLOW (23697)	8010-01-344-5088
	5-GALLON	YELLOW (23697)	8010-01-344-5099
	1-GALLON	BLUE (24516)	8010-01-344-5087
	5-GALLON	BLUE (24516)	8010-01-344-5098
	1-GALLON	GREEN (24585)	8010-01-344-5090
	5-GALLON	GREEN (24585)	8010-01-344-5101
	1-GALLON	BLUE (25526)	8010-01-344-5095
	5-GALLON	BLUE (25526)	8010-01-344-5106
	1-GALLON	GRAY (26307)	8010-01-344-5091
	5-GALLON	GRAY (26307)	8010-01-344-5102
	1-GALLON	YELLOW-GRAY (26400)	8010-01-344-5093
	5-GALLON	YELLOW-GRAY (26400)	8010-01-344-5104
	1-GALLON	GRAY (26493)	8010-01-344-5094
	5-GALLON	GRAY (26493)	8010-01-344-5105
	1-GALLON	GRAY (26496)	8010-01-344-5092
	5-GALLON	GRAY (26496)	8010-01-344-5103
	1-GALLON	WHITE (27880)	8010-01-344-5089
	5-GALLON	WHITE (27880)	8010-01-344-5100
<b>DOD-C-24596</b>	1-GALLON	ROSEWOOD (22519)	8010-01-208-5832
	5-GALLON	ROSEWOOD (22519)	8010-01-208-1774
	1-GALLON	SAND (22563)	8010-01-206-4712
	5-GALLON	SAND (22563)	8010-01-208-7772
	1-GALLON	YELLOW (23697)	8010-01-209-1153
	5-GALLON	YELLOW (23697)	8010-01-208-7774
	1-GALLON	GREEN (24585)	8010-01-208-1779
	5-GALLON	GREEN (24585)	8010-01-208-1780
	1-GALLON	BLUE (25526)	8010-01-208-7776
	5-GALLON	BLUE (25526)	8010-01-209-1155
	5-GALLON	BLUE (25550)	8010-01-374-4345
	1-GALLON	GRAY (26307)	8010-01-208-1781
	5-GALLON	GRAY (26307)	8010-01-208-7778
	1-GALLON	YELLOW-GRAY(26400)	8010-01-208-1777
	5-GALLON	YELLOW-GRAY(26400)	8010-01-208-7775
	1-GALLON	GRAY (26493)	8010-01-208-1782

	5-GALLON	GRAY (26493)	8010-01-209-3195
	1-GALLON	GREEN-GRAY(26496)	8010-01-209-1154
	5-GALLON	GREEN-GRAY(26496)	8010-01-208-1776
	1-GALLON	WHITE (27880)	8010-01-208-1778
	5-GALLON	WHITE (27880)	8010-01-208-7777
<b>DOD-P-24631</b>	2-GALLON KIT	F.184 BLACK	8010-01-349-4757
	5-GALLON KIT	F.184 BLACK	8010-01-212-5493
	2-GALLON KIT	F.185 DK GRAY	8010-01-212-7518
	5-GALLON KIT	F.185 DK GRAY	8010-01-349-4756
	2-GALLON KIT	F.186 WHITE	8010-01-212-5494
	5-GALLON KIT	F.186 WHITE	8010-01-349-4758
<b>TPD-24631</b>	1.25 QUART KIT	F.187 RO1.8	8010-01-380-3280
	1.25 GALLON KIT	F.187 RO1.8	8010-01-380-3257
<b>DOD-P-24648</b>	1-GALLON KIT	GRAY (36231)	8010-01-350-2068
	4-GALLON KIT	GRAY (36231)	8010-01-349-8055
<b>MIL-P-15931</b>	5-GALLON	RED, F.121	8010-01-380-0387
	5-GALLON	BLACK, F.129	8010-01-380-0337
<b>MIL-PRF-24763</b>			
TYPE I,CLASS 1	5-GALLON	GRAY (16187)	8010-01-344-6683
TYPE I,CLASS 1	5-GALLON	GRAY (16307)	8010-01-344-6688
TYPE I,CLASS 2	5-GALLON	BLACK (27038)	8010-01-344-5114
TYPE I,CLASS 2	5-GALLON	BROWN (20109)	8010-01-344-5107
TYPE I,CLASS 2	5-GALLON	GRAY (26008)	8010-01-344-5108
TYPE I,CLASS 2	5-GALLON	GRAY (26173)	8010-01-344-5109
TYPE I,CLASS 2	5-GALLON	GRAY (26231)	8010-01-344-6689
TYPE I,CLASS 2	5-GALLON	GRAY (26270)	8010-01-344-5110
TYPE I,CLASS 2	5-GALLON	GRAY (26307)	8010-01-344-5111
TYPE I,CLASS 2	5-GALLON	GRAY (26373)	8010-01-344-5112
TYPE I,CLASS 2	5-GALLON	GRAY (26492)	8010-01-344-5113
TYPE I,CLASS 2	5-GALLON	OLIVE DRAB (24084)	8010-01-344-6686
TYPE I,CLASS 2	5-GALLON	WHITE (27875)	8010-01-344-5115
TYPE I,CLASS 2	5-GALLON	LIGHT BUFF (23578)	8010-01-344-6682
TYPE I,CLASS 2	5-GALLON	YELLOW (23594)	8010-01-344-6684
TYPE I,CLASS 4	5-GALLON	BLACK (37038)	8010-01-344-6687
TYPE I,CLASS 4	5-GALLON	GRAY (36118)	8010-01-344-5117
TYPE I,CLASS 4	5-GALLON	GRAY (36231)	8010-01-344-5118
TYPE I,CLASS 4	5-GALLON	GRAY (36270)	8010-01-344-6685
TYPE I,CLASS 4	5-GALLON	GREEN (34097)	8010-01-344-5116
<b>MIL-PRF-19565</b>	1-GALLON	WHITE	8030-00-174-2588
<b>MIL-PRF-46081</b>	1-GALLON	PASTEL GREEN	8010-00-228-0620
	5-GALLON	PASTEL GREEN	8010-00-228-0621
	1-GALLON	BULKHEAD GRAY	8010-00-228-0622
	5-GALLON	BULKHEAD GRAY	8010-00-228-0623
	1-GALLON	GREEN GRAY	8010-00-228-0624
	5-GALLON	GREEN GRAY	8010-00-228-1425
	1-GALLON	YELLOW GRAY	8010-00-228-0626



	5-GALLON	YELLOW GRAY	8010-00-228-0627
	1-GALLON	PEARL GRAY	8010-00-228-0628
	5-GALLON	PEARL GRAY	8010-00-228-0631
	1-GALLON	PASTEL BLUE	8010-00-228-0632
	5-GALLON	PASTEL BLUE	8010-00-228-0649
<b>ANTI-SWEAT PAINT</b> %%	1-GALLON	WHITE	8010-01-434-2104
	5-GALLON	WHITE	8010-01-385-7578
<b>ANCHOR CHAIN PAINT</b> %%%	1-GALLON KIT	RED	8010-01-432-2615
	1-GALLON KIT	BLUE	8010-01-432-1206
	1-GALLON KIT	WHITE	8010-01-432-2616
	5-GALLON KIT	BLACK	8010-01-432-2617
	5-GALLON KIT	SAFETY YELLOW	8010-01-432-2614
<b>MIL-PRF-24667</b>			
TYPE I, COMP G	5-GALLON KIT	DARK GRAY(36076)	8010-01-397-3802
TYPE I, COMP L	5-GALLON KIT	DARK GRAY(36076)	8010-01-397-3804
TYPE II,COMP G	5-GALLON KIT	DARK GRAY(36076)	8010-01-397-3806
	5-GALLON KIT	HAZE GRAY(36270)	8010-01-397-3807
	5-GALLON KIT	BLACK (37038)	8010-01-397-3820
	5-GALLON KIT	WHITE (37875)	8010-01-397-3822
	5-GALLON KIT	OLIVE DRAB (34088)	8010-01-397-3984
TYPE II,COMP L	5-GALLON KIT	DARK GRAY (36076)	8010-01-397-3808
PRIMERS	1-GALLON	DARK GRAY (26008)	8010-01-397-3986
	5-GALLON	DARK GRAY (26008)	8010-01-397-3810
	1-GALLON	BUFF (22516)	8010-01-397-3987
	5-GALLON	BUFF (22516)	8010-01-397-3811
COLOR TOPPINGS	5-GALLON KIT	RED (31136)	8010-01-397-3815
	5-GALLON KIT	YELLOW (33538)	8010-01-397-3814
	5-GALLON KIT	DARK GRAY (36076)	8010-01-397-3816
	5-GALLON KIT	WHITE (37875)	8010-01-397-3812
<b>TPD-1000</b>	1-GALLON	ALUMINUM	8010-01-344-5119
	5-GALLON	ALUMINUM	8010-01-344-5120
<b>TT-P-28</b>	1-QUART	ALUMINUM	8010-01-664-7468
	1-GALLON	ALUMINUM	8010-00-815-2692
	5-GALLON	ALUMINUM	8010-00-857-1938

%% ANTI-SWEAT PAINT IS HEMPELS "ANTI CONDENS 617US" OR EQUAL

%%% ANCHOR CHAIN PAINT IS "AMERON PSX 700" OR EQUAL

5. REQUEST WIDEST DISTRIBUTION OF THIS MESSAGE.

BT

# Solid Waste

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- Solid Waste Sorting Charts
- Solid Waste Messages:
  - \* COMNAVSEA WASH DC 040348Z JAN 99 (Prohibition of Plastic Waste Discharge at Sea)
  - \* COMNAVSEA WASH DC 230348Z NOV 98 (Plastic Waste Management Without PWP)
  - \* COMNAVSEA WASH DC 230349Z NOV 98 (NAVSEA Fleet Solid Waste Conferences Lessons Learned)
  - \* COMNAVSEA WASH DC 260348Z NOV 96 (PWP Fleet Advisory No. 1: Early Fuse Problem)
  - \* COMNAVSEA WASH DC 260348Z FEB 97 (PWP Fleet Advisory No. 97-2: OBB Bags)
  - \* COMNAVSEA WASH DC 110349Z MAR 97 (PWP Fleet Advisory No. 97-3: 30 Minute CMU Warm-up)
  - \* COMNAVSEA WASH DC 040348Z JUN 97 (PWP Fleet Advisory No. 97-4: Mold Release Agent)
  - \* NSWCCD-SSES PHILADELPHIA PA301935Z JAN 98 (PWP Fleet Advisory No. 98-5: Electrical Enclosure Wiring)
  - \* COMNAVSEA WASH DC 120348Z MAR 98 (PWP Lessons Learned Fleet Advisory No. 98-6)

## Solid Waste Sorting Chart - Containers

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Cardboard					Place plastic tape into plastics only container
Cardboard (waxed or tri-walls)					
Glass (jars/bottles)					
HAZMAT Containers				Turn in to HAZMINCEN	Includes paint cans
Plastic Bottles					Remove excess food contamination
Plastic Film					
Styrofoam					
Wet Strength Bags					
Wood (crates & boxes)				Incinerate or Store & Retrograde	

**Legend:** **Shaded Area** indicates proper place to put trash

## Solid Waste Sorting Chart – Food Related Items

Solid Waste Item	Plastics Only	Metal & Glass Only	Food / Paper	Other	Comments
Aluminum Foil					
Bones					
Candy Wrappers					
Crackers					
Food Cans (metal)					
Food (loose)					
Milk Bladders					Empty contents before processing
Plastic Wrap					Remove excess food contamination
Soda Cans		If no recycling available		If recycling available; compact, store & recycle	
Vegetable Oil				Store & retrograde or strain & place in waste oil tank	
Utensils (plastic)					

**Legend:** **Shaded Area** indicates proper place to put trash

## Solid Waste Sorting Chart – Industrial Waste

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Cable (non-plastic coated)		Small quantities		Large quantities store & retrograde	Plastic coated non-electrical cables process the same as electrical cables
Durable Items (non-plastic)				Store & retrograde. If disposal is required, discharge unprocessed beyond 25 nm and outside special areas	Examples: I-beam, large plate, metal trash cans.
Durable Items (with some plastic)				Store & retrograde	
Electrical Cable & Wire	Small quantities			Heavy and large quantities – store & retrograde	
HAZMAT Containers				Turn in to HAZMINCEN	Includes paint cans
Light Bulbs (fluorescent)				Turn in to HAZMINCEN	Contains Mercury and other hazardous materials
Light Sticks				Turn in to HAZMINCEN	
Light Bulbs (incandescent)					
Linoleum Tile	Small quantities			Large quantities – store & retrograde	

**Legend:** **Shaded Area** indicates proper place to put trash

## Solid Waste Sorting Chart – Industrial Waste

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Medical Waste (infectious/non-infectious)				Handled by Medical Office	
Metal (structural & large metal items)				Discharge Overboard	Examples: I-beam, large plate, metal trash cans.
Non-Plastic Hardware (nuts, bolts, etc.)				Discharge Overboard	In burlap bag with shredded metal and glass
Textiles				Incinerate or store & retrograde	Including non-oily rags
Wood				Incinerate or store & retrograde	Including wood from pallets

**Legend:** Shaded Area indicates proper place to put trash

## Solid Waste Sorting Chart – Office Supplies

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Classified Paper Documents			Up to Secret only		
Computer CDs	Unclassified				
Computer Disks	Unclassified				
Computer Paper					
Paper (loose)					
Pens & Pencils					
Telephones, Electronics, etc.					

**Legend:** Shaded Area indicates proper place to put trash

## Solid Waste Sorting Chart – Personal Items

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Aerosol Cans				Turn in to HAZMINCEN	
Batteries				Turn in to HAZMINCEN	
Butane Lighters				Turn in to HAZMINCEN	
Cigarette Butts					
Feminine Hygiene Products				Incinerate or store & retrograde	
Foam Mattresses				Store & retrograde	
Magazines					
Magazine Music Tapes & CDs					
Newspapers					

**Legend:** **Shaded Area** indicates proper place to put trash



## Solid Waste Sorting Chart – Personal Items

Solid Waste Item	Plastics Only Container	Metal & Glass Only Container	Food / Paper Container	Other	Comments
Shower Shoes & Curtains					
Uniforms (clothing & shoes)				Store & retrograde	
Urine Bags (pilot)				Incinerate or store & retrograde	
Video Tapes					

Legend: **Shaded Area** indicates proper place to put trash

R 040348Z JAN 99

FM COMNAVSEASYS COM WASHINGTON DC//03L//

UNCLAS //N09593//

MSGID/GENADMIN/SEA 03L1B//

**SUBJ/PROHIBITION OF PLASTIC WASTE DISCHARGE AT SEA//**

REF/A/DOC/OPNAVINST 5090.1B SECTION 19-7//

REF/B/RMG/COMNAVSEA WASH DC 230348ZNOV98//

NARR/REF B PROVIDES NAVSEA RECOMMENDED PROCEDURES FOR PLASTIC WASTE MANAGEMENT WITHOUT PWP//

POC/S.P. MARKLE LCDR/SEA 03L1B/-/-/TEL703 602-8144 X207//

AKNLDG/-//

RMKS/1. IAW REF A, EFFECTIVE 1 JAN 99 DISCHARGE OF PLASTIC WASTE FROM NAVY SURFACE SHIPS IS PROHIBITED. THE 3/20 PLASTIC DISCHARGE RULE NO LONGER APPLIES. SUBMARINES ARE EXEMPT UNTIL 31 DEC 2008. ALL SURFACE SHIPS WHICH REQUIRE THE PLASTIC WASTE PROCESSOR (PWP) TO COMPLY WITH REF A HAVE BEEN OUTFITTED WITH EXCEPTION OF FOUR SHIPS (FFG 13, LSD 52, CVN 73, CVN 68) WHICH ARE BEING OUTFITTED DURING ONGOING CNO SCHEDULED AVAILABILITIES.

2. REF B PROVIDED RECOMMENDED PROCEDURES FOR MINIMIZATION, MANAGEMENT AND LONG TERM STORAGE OF PLASTIC WASTE ON BOARD SHIPS WITHOUT THE PWP. THESE PROCEDURES ARE ALSO APPLICABLE WHEN PWP EQUIPMENT IS OUT OF COMMISSION.

3. POC FOR PWP IN SERVICE OPERATIONAL ISSUES IS MR. S. MARX, NSWCCD-SSSES CODE 631, TEL 215-897-7270, DSN 443-7270,

MARX@MAILGATE.NAVSSES.NAVY.MIL. NAVSEA POC FOR ORGANIZATIONAL AND OPERATIONAL ISSUES MAY BE REACHED BY EMAIL AT

MARKLE\_STEPHEN\_P\_LCDR@HQ.NAVSEA.NAVY.MIL. FURTHER INFORMATION INCLUDING PAST FLEET ADVISORY MESSAGES MAY BE FOUND AT THE NAVY SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE WEBSITE AT [HTTP//NAVYSEIC.COM](http://NAVYSEIC.COM).

4. REQUEST TYCOMS READDRESS THIS MESSAGE TO ALCON.//

R 230348Z NOV 98

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ/PLASTIC WASTE MANAGEMENT WITHOUT PWP//**

REF/A/DOC/OPNAVINST 5090.1B CHAPTER 19-7//

POC/S.P. MARKLE LCDR/SEA 03L1B/-/-/TEL:703 602-8144 X207//

AKNLDG/-//

RMKS/1. THIS MESSAGE PROVIDES RECOMMENDED PROCEDURES FOR MINIMIZATION, MANAGEMENT AND LONG TERM STORAGE OF PLASTIC WASTE ON BOARD SHIPS NOT RECEIVING THE PLASTIC WASTE PROCESSOR (PWP). THESE PROCEDURES ARE ALSO APPLICABLE WHEN PWP EQUIPMENT IS OUT OF COMMISSION.

2. IAW REF A, DISCHARGE OF PLASTIC WASTE FROM NAVY SHIPS, AFTER PWP INSTALLATION, OR AFTER 31 DEC 98, WHICHEVER COMES FIRST IS PROHIBITED. AFTER 31 DEC 98, THE 3/20 PLASTIC DISCHARGE RULE NO LONGER APPLIES. FMP PWP INSTALLATIONS WILL COMPLETE BY THIS DATE, DUE TO SIZE AND MISSION MCM 1, PC 1, AND MHC 51 CLASS SHIPS WILL NOT BE RECEIVING PWPS. SOME SHIPS WILL NOT BE RECEIVING PWPS DUE TO DECOMMISSIONING SCHEDULES, INCLUDING: AE 29, AO 186, AS 41, FFG 31, FFG 11, FFG 19 AND LSD 38. THESE SHIPS MUST RETAIN ALL PLASTIC WASTE WHILE AT SEA FOR RETROGRADE TO CLF SHIPS FOR FURTHER TRANSFER (FFT) ASHORE, TRANSFERRED TO A SHIP IN COMPANY WITH PWP CAPABILITY FOR PROCESSING ASSISTANCE, OR HOLD FOR TRANSFER AND DISPOSAL ASHORE. THESE PROCEDURES WILL ASSIST THESE SHIPS IN MINIMIZING THE VOLUME, ODOR AND SANITATION ISSUES ASSOCIATED WITH PLASTIC WASTE.

3. MINIMIZE PLASTIC WASTE WHILE AT THE PIER. THIS CAN BE ACHIEVED BY SELECTIVE PURCHASING OF SUPPLIES AND ELIMINATION OF EXCESS OVERWRAP AND PACKAGING MATERIAL BEFORE LOADOUT.

4. REMOVE EXCESS FOOD WASTE FROM PLASTIC WASTE. DRAIN, EMPTY AND/OR RINSE AS NECESSARY. MANUALLY COMPRESS AS MUCH AS POSSIBLE.

5. STORE AND SEAL IN ODOR BARRIER BAGS (OBB). TWO SIZES OF OBBS ARE AVAILABLE: 36 X 50 INCH OBB, NSN: 8105-01-392-6515 AND 24 X 27 INCH OBB, NSN: 8501-01-392-6510. THE LARGER BAG IS RECOMMENDED.

6. THE RECOMMENDED HEAT SEALER IS A PORTABLE MOTORIZED UNIT MANUFACTURED BY DOBOY, INC. (MODEL HS-B11), NSN: 3540-00-819-8837, APPROXIMATELY \$1700.

7. THE OBBS SHOULD BE FILLED AND SEALED AS FOLLOWS:

A. THE HEAT SEALER ROLLER SPACINGS SHOULD BE FACTORY SET TO 1/32 OF AN INCH. THIS SHOULD BE CORRECT FOR THE OBBS. IF BAGS ARE NOT SEALING CORRECTLY AT THE TEMPERATURE SPECIFIED IN 7.C., SEE MANUFACTURER'S OPERATING INSTRUCTIONS AND PARTS MANUAL.

B. ENERGIZE THE HEAT SEALER (120VAC) AND SET THERMOSTAT KNOB AT 4.0.

C. DEPRESS THE ROCKER SWITCH TO PREHEAT SETTING. THE RED INDICATOR LIGHT WILL COME ON AND STAY ON UNTIL A TEMPERATURE OF 120-140 DEGREES C IS REACHED AND MAINTAINED, THIS SHOULD BE VERIFIED ON THE THERMOSTAT. (WARNING - IF THE TEMPERATURE EXCEEDS 150 DEGREES C, OBBS WILL MELT REQUIRING HEAT SEALER REPAIR, IF THE TEMPERATURE IS

BELOW 120 DEGREES C THE BAG WILL NOT SEAL). IF THE DESIRED TEMPERATURE IS NOT ACHIEVED, ADJUST THE KNOB SLIGHTLY LOWER OR HIGHER AND WAIT UNTIL THE CORRECT TEMPERATURE IS MAINTAINED.  
D. WHEN THE RED INDICATOR LIGHT GOES OUT, THE HEAT SEALER IS READY FOR USE. VERIFY THE DESIRED TEMPERATURE IS ACHIEVED, IF NOT RETURN TO STEP C.

E. SLOWLY TEAR ONE OBB OFF THE ROLL, BEING CAREFUL TO TEAR ONLY ALONG PERFORATIONS.

F. FILL OBB WITH PLASTIC. IF USING PLASTIC TRASH BAGS TO COLLECT SHIPBOARD WASTE, BE SURE TO OPEN THEM FIRST TO ELIMINATE ENTRAPPED AIR AND ALLOW FOR THE INSPECTION OF THE WASTE FOR NON-PLASTICS AND EXCESSIVE FOOD. PLACE AS MUCH PLASTIC AS POSSIBLE IN THE OBB, ALLOWING SUFFICIENT ROOM FOR HEAT SEALING THE OPEN END. COMPRESS RIGID CONTAINERS MANUALLY PRIOR TO PUTTING IN THE OBB. DO NOT USE EXCESSIVE FORCE PLACING WASTE INTO THE OBB. EXCESSIVE FORCE ON HARD PLASTIC WASTE WILL PUNCTURE THE OBB.

G. DEPRESS THE ROCKER SWITCH LABELED HEAT-MOTOR ON THE HEAT SEALER TO ACTIVATE THE DRIVE MOTOR AND BELTS.

H. PICK UP THE FILLED OBB AND PULL THE OPEN END OF THE BAG TAUT. CAREFULLY PLACE THE LEFT SIDE OF THE BAG INTO THE FEED END OF THE HEAT SEALER. GUIDE THE BAG THROUGH UNTIL THE SEAL IS COMPLETE ACROSS THE ENTIRE BAG. VISUALLY CHECK SEAL, A PROPER SEAL WILL NOT SEPARATE WHEN PULLED ON BOTH SIDES. IF IN DOUBT, RESEAL OVER THE FIRST.

I. RETURN THE ROCKER SWITCH TO THE PREHEAT SETTING TO MAINTAIN STANDBY MODE OR TURN OFF HEAT SEALER BY DEPRESSING THE ROCKER SWITCH TO THE CENTER POSITION.

J. CAREFULLY CARRY THE SEALED OBB TO THE DESIGNATED VENTILATED STORAGE AREA. ENSURE OBBS ARE NOT SCRAPED AGAINST ABRASIVE OBJECTS IN PASSAGEWAYS DURING TRANSIT OR STACKED UP AGAINST SHARP OBJECTS IN THE STORAGE AREA.

8. PLASTIC STORAGE VOLUME CAN BE DECREASED BY 50 PERCENT BY USE OF A WET-DRY SHOP VAC TO EXTRACT AIR FROM THE OBB PRIOR TO APPLYING THE HEAT SEALER.

A. PERFORM STEPS 7.A THROUGH 7.G.

B. PULL THE OPEN END OF THE FILLED OBB TAUT.

C. CAREFULLY PLACE LEFT SIDE OF OBB INTO FEED END OF HEAT SEALER. GUIDE THE BAG THROUGH UNTIL THE SEAL IS ABOUT 3 QTRS OF THE WAY ACROSS. THEN QUICKLY TURN OFF THE HEAT SEALER MOTOR BY RETURNING THE ROCKER SWITCH TO THE PREHEAT SETTING. THE OBB WILL BE HELD IN PLACE BY THE HEAT SEALER ROLLERS.

D. PLACE WET-DRY SHOP VACUUM HOSE NOZZLE INSIDE THE OBB, THEN TURN ON ELECTRICAL POWER TO SHOP VACUUM. MOVE VACUUM HOSE INSIDE OBB UNTIL MOST OF THE AIR IS REMOVED. THIS MAY REQUIRE MANIPULATING THE WASTE PLASTIC INSIDE THE OBB TO PREVENT PLUGGING OF THE VACUUM HOSE NOZZLE. TO ACHIEVE FULL VACUUM, GATHER THE BAG MATERIAL AROUND

THE OPEN END OF THE BAG AND SQUEEZE IT AGAINST THE INSERTED HOSE. ALLOW ABOUT 30-60 SECONDS TO COMPLETE THE VACUUM OPERATION.

E. TURN OFF SHOP VACUUM AND QUICKLY WITHDRAW VACUUM HOSE FROM INSIDE THE OBB. TURN ON HEAT SEALER BY MOVING THE ROCKER SWITCH TO THE HEAT-MOTOR SETTING TO COMPLETE THE HEAT SEAL ACROSS THE BAG. VISUALLY CHECK THE SEAL, A PROPER SEAL WILL NOT SEPARATE WHEN PULLED ON BOTH SIDES. IF IN DOUBT, RESEAL OVER FIRST.

F. PERFORM STEPS 7.I AND 7.J.

9. THIS INFORMATION WILL BE INCORPORATED INTO THE NEXT REVISION OF THE SHIPBOARD SOLID WASTE MANAGEMENT GUIDE, DUE IN JUN 99 AS THE JOINT NAVSEA/NAVSUP SOLID WASTE MANAGEMENT PROCEDURES BOOK.

10. POC FOR IN SERVICE OPERATIONAL ISSUES IS MR. S. MARX, NSWCCD-SSES CODE 631, TEL: 215-897-7270, DSN 443-7270, MARX@MAILGATE.NAVSSES.NAVY.MIL. NAVSEA POC FOR ORGANIZATIONAL AND OPERATIONAL ISSUES MAY BE REACHED BY EMAIL AT MARKLE\_STEPHEN\_P\_LCDR@HQ.NAVSEA.NAVY.MIL. FURTHER INFORMATION INCLUDING PAST FLEET ADVISORY MESSAGES MAY BE FOUND AT THE NAVY SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE WEBSITE AT [HTTP://NAVYSEIC.COM](http://NAVYSEIC.COM).

11. REQUEST TYCOMS READDRESS THIS MESSAGE TO ALCON.//

BT

R 230349Z NOV 98

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ/NAVSEA FLEET SOLID WASTE CONFERENCES LESSONS LEARNED//**

REF/A/MTG/LANTFLT SOLID WASTE CONFERENCE//

REF/B/MTG/PACFLT SOLID WASTE CONFERENCE//

REF/C/DOC/OPNAVINST 5090.1B SECTION 19-7//

REF/D/RMG/COMNAVSEA WASH DC 230348ZNOV98//

REF/E/RMG/COMNAVSEA WASH DC 120348ZMAR 98//

REF/F/DOC/NSWC-TR-63-97/25//

REF/G/DOC/SEIC WEBSITE//

REF/H/DOC/PLASTIC WASTE NTP//

REF/I/DOC/SOID WASTE NTP//

NARR/REF A IS THE NAVSEA SPONSORED FLEET SOLID WASTE CONFERENCE CONDUCTED 24-25 AUGUST 1998 AT NOB NORFOLK. REF B IS THE NAVSEA SPONSORED FLEET SOLID WASTE CONFERENCE CONDUCTED 10-11 SEPTEMBER 1998 AT NAS NORTH ISLAND. REF D PROVIDES NAVSEA RECOMMENDED PROCEDURES FOR PLASTIC WASTE MANAGEMENT WITHOUT PWP; REF E IS PWP LESSONS LEARNED MESSAGE; REF F IS NSWCCD TECHNICAL REPORT, SOLID WASTE MANAGEMENT EQUIPMENT GUIDE; REF G IS THE NAVY SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE WEBSITE AT [HTTP://NAVYSEIC.COM](http://NAVYSEIC.COM); REF H IS PLASTIC WASTE PROCESSOR NAVY TRAINING PLAN, NTP S-30-9508; REF I IS SOLID WASTE EQUIPMENT NAVY TRAININGPLAN, NTP S-30-9603 WHICH COVERS PULPERS AND METAL/GLASS SHREDDER.//  
POC/S.P. MARKLE LCDR/SEA 03L1B/-/-/TEL:703 602-8144 X207//

AKNLDG/-//

RMKS/1. THE ANNUAL FLEET SOLID WASTE CONFERENCES PROVIDED MEANINGFUL INFORMATION EXCHANGE BETWEEN FLEET AND NAVSEA. THIS MSG PROVIDES A SUMMARY OF THE SIGNIFICANT ISSUES FROM REF A AND B.  
2. THE BACKFIT OF PLASTIC WASTE PROCESSORS (PWP) ONBOARD SHIPS FFG 7 CLASS AND LARGER IS ON TRACK TO COMPLETE BY 31 DEC 98. AFTER THIS DATE FEDERAL LAW PROHIBITS OVERBOARD DISCHARGE OF PLASTIC WASTE BY US NAVY SHIPS, EXCEPT AS GIVEN IN REF C IN CASES OF SAFETY OF SHIP OR PERSONNEL. THE 3/20 RULE FOR PLASTIC WASTE DISCHARGE ENDS ON 31 DEC 98. TO DATE 178 OF 189 SHIP INSTALLATIONS (94 PERCENT) HAVE BEEN COMPLETED, WITH THE FINAL 11 INSTALLATIONS IN PROGRESS. INSTALLATION OF PULPERS AND METAL/GLASS SHREDDERS (MGS) IS CURRENTLY IN PROGRESS WITH A COMPLETION DATE OF 31 DEC 00 FOR SHIPS FFG 7 CLASS AND LARGER. INTRODUCTION OF THIS SUITE OF SOLID WASTE MANAGEMENT EQUIPMENT (SWME) HAS BEEN ENHANCED THROUGH SEVERAL LESSONS LEARNED MESSAGES. RECOMMENDED PLASTIC WASTE MANAGEMENT PROCEDURES FOR SHIPS NOT RECEIVING THE PWP, OR FOR OUT OF COMMISSION PWPS IS CONTAINED IN REF D. REF E DETAILS SHIPBOARD LESSONS LEARNED FOR ENHANCED OPERATION OF THE PWP.  
3. FEEDBACK RECEIVED FROM REFS A AND B, RECENT SHIP VISITS, AND ONGOING EFFORTS OF NAVY MANPOWER ANALYSIS CENTER (NAVMAC) CONFIRM THAT THE MOST EFFICIENT SHIP SOLID WASTE PROGRAMS ARE THOSE

WHERE SUPPLY DEPARTMENT OWNS AND OPERATES THE EQUIPMENT (TO INCLUDE DAILY CLEANING) WITH ENGINEERING DEPARTMENT PROVIDING EQUIPMENT MAINTENANCE SUPPORT. EACH SHIP IS UNIQUE, BUT EXPERIENCE HAS SHOWN THAT APPROXIMATELY 80 PERCENT OF SOLID WASTE GENERATED COMES DIRECTLY FROM SUPPLY DEPARTMENT FUNCTIONS (50 PERCENT FROM THE GALLEY). SOLID WASTE EQUIPMENT SUITE FOR EACH SHIP WAS SELECTED BASED UPON RELIABILITY CONSIDERATIONS AND NAVSEA ESTIMATES THAT THE RESULTING EQUIPMENT CONFIGURATIONS REQUIRE ABOUT 7 HOURS OF OPERATION A DAY, INCLUDING ONE HOUR FOR CLEANING. ON MANY SHIPS, THE MOST EFFICIENT EQUIPMENT OPERATION APPEARS TO BE TWO HOURS AROUND MEALTIMES. NAVSEA RECOMMENDS THAT EACH SHIP DEVELOP A UNIQUE SOLIDWASTE MANAGEMENT INSTRUCTION THAT INCLUDES: EQUIPMENT OWNERSHIP AND MAINTENANCE RESPONSIBILITIES, AND HOURS OF OPERATIONS TAKING INTO ACCOUNT SWEEPERS AND FIELD DAY ACTIVITIES. REF F PROVIDES A SAMPLE SHIP INSTRUCTION, WHICH IS ALSO AVAILABLE AT REF G.

4. SHIPS WITH THE MOST EFFECTIVE SOLID WASTE PROGRAM ARE CHARACTERIZED BY TOP DOWN ALL HANDS INVOLVEMENT AS GIVEN IN AN OWN SHIP INSTRUCTION. THESE SHIPS ALSO HAVE A GOOD TRAINING PROGRAM AND DEMONSTRATED COMMITMENT TO ALL EQUIPMENT OPERATOR AND MAINTAINERS BEING QUALIFIED VIA JOB QUALIFICATION REQUIREMENTS (JQR'S). THE KEY TO SUCCESSFUL OPERATION OF THE SWME IS TRAINING. REFS H AND I DOCUMENT SWME INITIAL AND FOLLOW-ON TRAINING REQUIREMENTS AS COMPUTER BASED INTERACTIVE COURSEWARE (ICW). ICW IS PROVIDED THROUGH THE SHIPBOARD TRAINING ENHANCEMENT PROGRAM (STEP) CD-ROM DISK ISSUED TO ALL NAVY SHIPS. EACH COURSE IS USER-FRIENDLY, SELF-PACED WITH MANY ILLUSTRATIONS DIVIDED INTO MODULES FOR EQUIPMENT OPERATION AND MAINTENANCE. PMS, TROUBLESHOOTING AND CORRECTIVE MAINTENANCE ARE COVERED. EACH MODULE IS DIVIDED INTO LESSONS WITH A BRIEF QUIZ AT LESSONS END. A MORE COMPREHENSIVE TEST ENDS EACH MODULE. MINIMUM COMPUTER REQUIREMENTS ARE: 486DX 33 MHZ CPU, 8M RAM, UTILIZING WINDOWS 3.1 OR HIGHER, WAV CAPABLE SOUND BOARD AND VGA MONITOR. COURSE NUMBERS ARE: A-690-0003 (PWP), A-690-0001 (LARGE PULPER OPERATION), A-690-0004 (LARGE PULPER MAINTENANCE), A-690-0002 (SMALL PULPER OPERATION) AND A-690-0005 (SMALL PULPER MAINTENANCE). AN ADDITIONAL COURSE HAS BEEN DEVELOPED FOR MGS AND WILL BE AVAILABLE ON THE NEXT STEP ISSUE, PRELIMINARY MGS TRAINING DISKS WILL BE PROVIDED TO EACH SHIP DURING THE PULPER/MGS CERTIFICATION INSPECTIONS. STEP DISKS ARE DISTRIBUTED BY THE NAVAL EDUCATION AND TRAINING PROFESSIONAL DEVELOPMENT AND TECHNOLOGY CENTER (NETPDTC). DISKS CAN BE ORDERED FROM THEIR INTERNET WEBSITE AT [HTTP://WWW.CNET.NAVY.MIL/NETPDTC/STEP/INDEX.HTML](http://WWW.CNET.NAVY.MIL/NETPDTC/STEP/INDEX.HTML) OR BY CONTACTING// MR.DENNIS KNOTT AT (850) 452-1640 OR DSN 922-1640.

5. JQRS HAVE BEEN DEVELOPED FOR ALL SWME. THESE PROVIDE A COMPREHENSIVE RECORD OF THE REQUIRED TRAINING AND DEMONSTRATED SKILLS REQUIRED BY THOSE RESPONSIBLE FOR SWME OPERATION AND

MAINTENANCE. SAMPLE JQRS ARE FOUND IN REF F AND THE SOLID WASTE PAGE OF REF G. NAVSEA IS CURRENTLY WORKING WITH CNET TO TRANSITION SWME JQRS INTO FORMAL NAVY PQS.

6. THE NAVY SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE (SEIC) PROVIDES CURRENT INFORMATION TO ENHANCE AFLOAT PROGRAMS. INFORMATION IS AVAILABLE BY VISITING REF G OR THROUGH THE QUARTERLY NEWSLETTER. NO COST SUBSCRIPTIONS ARE AVAILABLE AT REF G, BY EMAIL AT PETE@NAVYSEIC.COM, BY VOICE (703) 416-1023 EXT 109 OR BY MAILING A REQUEST TO NAVY SEIC, C/O GEO-CENTERS INC., 1755 JEFFERSON DAVIS HIGHWAY, SUITE 910, ARLINGTON, VA 22202.

7. THE IN SERVICE ENGINEERING AGENT (ISEA), NAVAL SURFACE WARFARE CENTER CARDEROCK DIVISION - SHIP SYSTEMS ENGINEERING STATION, HAS BEEN TASKED BY NAVSEA TO PERFORM 100 PERCENT VERIFICATION/CERTIFICATION INSPECTIONS FOLLOWING EQUIPMENT INSTALLATION. HANDS ON ISEA OPERATOR AND MAINTENANCE TRAINING TO SUPPLEMENT THE ICW TRAINING IS PROVIDED AS PART OF THIS VISIT. IN ORDER TO DERIVE MAXIMUM BENEFIT, IT IS INCUMBENT UPON THE SHIP TO ENSURE ALL EQUIPMENT OPERATORS AND MAINTAINERS HAVE FIRST COMPLETED THE ICW. THE NSWCCD-SSES TECH REP WILL EXPLAIN ALL SAFETY FEATURES AND SAFETY REQUIREMENTS THEN DEMO EQUIPMENT OPERATION. NEXT, ROUTINE MAINTENANCE PROCEDURES ARE DEMONSTRATED TO MAINTENANCE PERSONNEL. IF REQUESTED, THE ISEA CAN PROVIDE ADDITIONAL HANDS-ON TRAINING. TO CHECK THE AVAILABILITY OF TECH REPS AND ARRANGE FOR ADDITIONAL TRAINING, CONTACT MR. MARTIN COHEN AT 215-897-1064 OR DSN 443-1064.

8. THE SWME INSPECTION MANUAL USED BY THE ISEA IN PERFORMING THE INSTALLATION VERIFICATION/CERTIFICATION INSPECTIONS IS AVAILABLE AT REF G. THIS MANUAL IS USED BY THE ISEA TO PERFORM OPERATIONAL INSPECTIONS OF THE EQUIPMENT AND TO VERIFY SPACE INSTALLATION ADEQUACY. THIS MANUAL PROVIDES SHIPS FORCE INSIGHT INTO BOTH EQUIPMENT AND SPACE WORK AS THEY MONITOR THE INSTALLATION PROCESS.

9. REPAIR PARTS ARE PROVIDED AT NO COST FROM NAVSEA WAREHOUSES THROUGH THE CRAMSI SYSTEM. ACCESS TO REPAIR ASSETS VIA "CRAMSI" FOR SNAP 1 SHIPS CAN BE DONE IN A NUMBER OF WAYS:

A. REQUESTS CONTAINING REQUISITION DATA (STANDARD MILSTRIP DATA - AOA FORMAT) CAN BE SENT VIA SALTS TO CRAMSI. THE SALTS ADDRESS FOR CRAMSI IS NCI.

B. THROUGH THE INTERNET. SHIPS MUST FIRST REQUEST A USERNAME AND PASSWORD AS DETAILED ON THE WEBSITE,

[HTTP://WWW.NSLC.FMSO.NAVY.MIL/TECHLOG/CRAMSI](http://www.nslc.fms.navy.mil/techlog/cramsi). THEN DOWNLOAD SOFTWARE PROGRAM "WINFRAME WEB CLIENT" AND INSTALL.

C. VIA DIRECT MODEM DIAL-IN SERVICE. "WINFRAME WEB CLIENT" SOFTWARE MUST FIRST BE DOWNLOADED FROM THE CRAMSI INTERNET WEBSITE AND INSTALLED. THE PHONE NUMBER IS DSN: 430-2858 OR COMMERCIAL: 717-605-2858.

D. DIRECT TELEPHONE CALL SERVICE. WEST COAST POC IS CHRIS CHRISTENSEN (213) 268-0163, EAST COAST POC IS RICH LAUGHLIN (757) 686-7940.



10. PLASTIC BAGS VS WET STRENGTH PAPER BAGS: THE STANDARD WET STRENGTH PAPER BAG (NSN 8105-01-284-2924), COMMONLY USED ON NAVY SHIPS IS REPORTED TO BE DIFFICULT TO PROCESS IN THE PULPERS. ALTHOUGH THEY CAN BE PROCESSED IN PULPERS, THE BAGS PROCESS SLOWLY. A RECOMMENDED ALTERNATIVE IS TO USE PLASTIC BAGS. PLASTIC BAG ADVANTAGES OVER PAPER INCLUDE: CLEAR ALLOWING VISUAL INSPECTION OF THE WASTE; COST EFFECTIVE, COSTING ABOUT \$0.09 EACH COMPARED TO THE WET STRENGTH PAPER BAGS COSTING ABOUT \$0.35 EACH; EASY TO DISPOSE OF IN THE PWP AFTER EMPTYING CONTENTS IN THE PULPER OR MGS. IF WET STRENGTH BAGS MUST BE USED, THE RECOMMENDED PROCEDURE IS TO PROCESS THEM IN THE PULPER WITH PAPER AND FOOD WASTE, AND TO LET THE PULPER OPERATE FOR AN EXTENDED PERIOD OF TIME AFTER FEEDING THE LAST BAG BEFORE ALLOWING THE PULPER TO SHUTDOWN NORMALLY.

11. RECOMMENDATIONS FOR EFFICIENT USE OF THE PLASTICS SHREDDER (PS): MOST PWPS INCLUDE A PS, ITS USE IS HIGHLY RECOMMENDED. THE PS IS USED TO PRE-PROCESS PLASTIC WASTE PRIOR TO LOADING AND PROCESSING IT IN THE COMPRESS MELT UNIT (CMU). IT BREAKS APART RIGID CONTAINERS AND PROVIDES A "HOMOGENOUS" MIXTURE OF PLASTIC FOR THE CMU. THE SHREDDED PLASTIC DROPS INTO A REMOVABLE PLASTIC BIN, WHICH SHOULD BE LINED WITH A PLASTIC BAG, LOCATED IN THE PS COLLECTION AREA. THE PS PROVIDES AN IMMEDIATE 4 TO 1 VOLUME REDUCTION, WHICH MEANS THAT MORE PLASTIC CAN BE LOADED INTO THE CMU AT ONE TIME, THUS IMPROVING EFFICIENCY. SHREDDING RIGID CONTAINERS, WHICH ARE DIFFICULT TO COMPRESS, ALSO REDUCES WEAR-AND-TEAR ON THE CMU BALL SCREW ACTUATOR AND OTHER CMU DRIVE ASSEMBLY COMPONENTS. USE OF THE PS ENABLES HEAVIER DISKS TO BE MADE WHICH REDUCES THE NUMBER OF CMU CYCLES SAVING OPERATION, MAINTENANCE AND CLEANUP TIME.

12. SOURCE SEGREGATION OF WASTE HAS BEEN SHOWN TO BE THE SINGLE MOST IMPORTANT ASPECT OF A GOOD SOLID WASTE MANAGEMENT PROGRAM. ALL HANDS ARE RESPONSIBLE FOR PERFORMING THIS FUNCTION, WHICH SIGNIFICANTLY SPEEDS OPERATION WITHIN THE WASTE PROCESSING ROOMS. SOME PORTS NOW PROVIDE SEGREGATED WASTE DISPOSAL CONTAINERS ON THE PIER, AND DEMAND THEIR USE. IT IS HIGHLY RECOMMENDED THAT SOURCE SEGREGATION, PERFECTED AT SEA, BE CONTINUED IN PORT, REGARDLESS OF SHORE BASED REQUIREMENTS. THE ADVANTAGE OF KEEPING THE CREW TRAINED IN THIS MIND SET PAYS DIVIDENDS WHEN RETURNING TO SEA.

13. POC FOR IN SERVICE OPERATIONAL ISSUES IS MR. S. MARX, NSWCCD-SSES CODE 631, TEL: 215-897-7270, DSN 443-7270, MARX@MAILGATE.NAVSSES.NAVY.MIL. NAVSEA POC FOR ORGANIZATIONAL AND OPERATIONAL ISSUES MAY BE REACHED BY EMAIL AT MARKLE\_STEPHEN\_P\_LCDR@HQ.NAVSEA.NAVY.MIL. FURTHER INFORMATION, INCLUDING PAST FLEET ADVISORY MESSAGES MAY BE FOUND AT THE NAVY SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE WEBSITE AT [HTTP://NAVYSEIC.COM//](http://NAVYSEIC.COM//)

BT

## **EARLY FUSE PROBLEM**

R 260348Z NOV 96

FM COMNAVSEASYS COM WASHINGTON DC//03L//

### **SUBJ: PLASTICS WASTE PROCESSOR FLEET ADVISORY NO. 1**

1. ALL SHIPS ADDRESSED BY THIS MESSAGE HAVE RECEIVED OR WILL RECEIVE PLASTICS WASTE PROCESSOR (PWP) COMPRESS MELT UNITS (CMUS).
  2. SHIPS RECEIVING CMUS WITH THE FOLLOWING REAR ELECTRICAL ENCLOSURE SERIAL NUMBERS: U001 THROUGH U055, W001 THROUGH W075, W078, W080, W082 THROUGH W084, W086, W087, W090, W091, W094 THROUGH W099, W102 THROUGH W105, W115, W116, W117, W121 AND W122 HAVE/WILL HAVE TWO INCORRECT FUSES INSTALLED. FUSES F1 AND F2 IN THE REAR ELECTRICAL ENCLOSURE ARE 1 AMP, 500V, SERIES FLQ FUSES. THEY SHOULD BE 2 AMP, 500V, SERIES FLQ FUSES. SHIPS FORCE SHOULD REPLACE THE 1 AMP FUSES WITH THE 2 AMP FUSES. THE 1 AMP FUSES CANNOT HARM THE EQUIPMENT, HOWEVER, THE 1 AMP FUSES MAY BLOW EVEN THOUGH THE CMUS ARE OPERATING NORMALLY.
  3. REPLACEMENT 2 AMP FUSES CAN BE ACQUIRED USING NSN 9N 5920-01-045-1484, PART NUMBER FLQ2. THE APL FOR THE REAR ELECTRICAL ENCLOSURE IS 509991552 WHICH CURRENTLY LISTS THE 1 AMP FUSE, NSN 9N 5920-00-868-4431. THE APL WILL BE ANNOTATED WITH THE CORRECT FUSE.//
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## **OBB BAGS**

R 260348Z FEB 97

FM COMNAVSEASYS COM WASHINGTON DC//03L//

### **SUBJ/PLASTICS WASTE PROCESSOR FLEET ADVISORY NO. 97-2**

1. THIS ADVISORY REGARDS THE ODOR BARRIER BAGS (OBB) ESSENTIAL FOR THE PROPER OPERATION OF THE PLASTICS WASTE PROCESSORS (PWP). THE OBB ARE USED TO PACKAGE DISKS OF COMPRESSED AND MELTED FOOD-CONTAMINATED PLASTICS WASTE. EACH DISK IS SEALED INTO AN OBB WITH A HEAT SEALER. THE OBB PREVENTS RELEASE OF NOXIOUS ODORS FROM DECAYING FOOD WASTE.
  2. ALL SHIPS ADDRESSED BY THIS MESSAGE HAVE RECEIVED OR WILL RECEIVE PWP IN CY 97 AND SHOULD ORDER SUFFICIENT QUANTITIES OF OBB IN ADVANCE OF THEIR PWP SHIPALT INSTALLATION COMPLETION DATES. ONLY ONE ROLL OF 50 BAGS IS SUPPLIED WITH THE ONBOARD SPARE PARTS KITS PROVIDED TO EACH SHIP. SHIPS SHOULD EXPECT TO USE ONE BAG PER 50 CREW MEMBERS PER DAY. IT IS RECOMMENDED THAT EACH SHIP ORDER A ONE MONTH SUPPLY, EXCEPT CV/CVN CLASS SHIPS WHICH SHOULD ORDER TWO MONTHS SUPPLY. USE NSN 9Q 8105-01-392-6510, P/N MIL-B-29597 TO ORDER THE BAGS.
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## **30 MINUTE CMU WARMUP**

R 110349Z MAR 97

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ: PLASTICS WASTE PROCESSOR FLEET ADVISORY NO. 97-3**

1. THIS ADVISORY ADDRESSES ALL SHIPS THAT HAVE RECEIVED OR WILL RECEIVE PLASTICS WASTE PROCESSOR (PWP) COMPRESS MELT UNITS (CMU'S) BY THE END OF CY 97.
  2. REQUEST ALL SHIPS OPERATING PWP CMU'S FOLLOW THESE OPERATING PROCEDURES ON START-UP IN ORDER TO ENSURE FULL PREHEAT PRIOR TO OPERATION AND TO PRECLUDE THE POSSIBILITY OF THE RAM SCORING OR DAMAGING THE INSIDE OF THE CHAMBER:
    - A. POWER UP SYSTEM AND TURN ON ALL AUXILIARIES AS INSTRUCTED BY THE TECHNICAL MANUAL/S9593-C4-MMM-010.
    - B. PULL OUT THE E-STOP AND PRESS RESET.
    - C. LET THE UNIT PREHEAT FOR 30 MINUTES PRIOR TO MOVING THE RAM AND/OR PROCESSING ANY PLASTIC WASTE.
    - D. PRIOR TO CMU SHUT DOWN ENSURE THE RAM IS IN THE FULLY RETRACTED POSITION.
  3. CMU SOFTWARE IS BEING REVISED TO AUTOMATICALLY PROVIDE PROPER PREHEATING PRIOR TO START-UP. REVISED CMU SOFTWARE WILL BE INSTALLED BY THE ISEA OR PROVIDED WITH INSTRUCTIONS FOR INSTALLATION BY SHIP'S FORCE.
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# MOLD RELEASE AGENT

R 040348Z JUN 97 ZYB

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ: PLASTICS WASTE PROCESSOR FLEET ADVISORY NO. 97-4**

1. THIS ADVISORY REGARDS THE MOLD RELEASE AGENT ESSENTIAL FOR THE PROPER OPERATION OF THE PLASTICS WASTE PROCESSORS (PWP). THE MOLD RELEASE AGENT IS USED TO PREVENT THE PLASTIC DISKS FROM STICKING TO THE RAM AND CHAMBER OF THE PWP COMPRESS MELT UNIT (CMU) AT THE COMPLETION OF A MELT CYCLE. IT ALSO SERVES AS A LUBRICANT TO PREVENT BINDING BETWEEN THE RAM AND CHAMBER. DURING NORMAL OPERATION THE DILUTED MOLD RELEASE AGENT MUST BE SPRAYED INTO THE CHAMBER AND ONTO THE RAM AND DOOR TO COMPLETELY WET ALL INTERIOR SURFACES BETWEEN OPERATING CYCLES. NOTE: PRIOR TO USE, THE MOLD RELEASE AGENT IS REQUIRED TO BE DILUTED WITH FOUR PARTS WATER TO ONE PART MOLD RELEASE AGENT.

2. ALL SHIPS ADDRESSED BY THIS MESSAGE HAVE RECEIVED OR WILL RECEIVE PWPS IN CY 97 AND SHOULD ORDER SUFFICIENT QUANTITIES OF MOLD RELEASE AGENT IN ADVANCE OF THEIR PWP SHIPALT INSTALLATION COMPLETION DATES. ONLY ONE 5-GALLON PAIL OF MOLD RELEASE AGENT IS SUPPLIED WITH THE ONBOARD SPARE PARTS KITS PROVIDED TO EACH SHIP. SHIPS SHOULD EXPECT TO USE ONE PAIL OF UNDILUTED MOLD RELEASE AGENT PER MONTH PER 1000 CREW MEMBERS. IT IS RECOMMENDED THAT EACH SHIP ORDER A ONE MONTH SUPPLY EXCEPT CV/CVN CLASS SHIPS WHICH SHOULD ORDER A TWO MONTH SUPPLY.

USE THE FOLLOWING INFORMATION TO ORDER THE MOLD RELEASE AGENT:

NSN: 1H009-LL-H46-4132, MACLUBE 317 MOLD RELEASE EMULSION;

P/N: MAC-317;

MFR: MCGEE INDUSTRIES, INC.

9 CROZERVILLE ROAD

P.O. BOX 2425

ASTON, PA 19014

Note: Corrected NSN from original message provided above.

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# ELECTRICAL ENCLOSURE WIRING

R 301935Z JAN 98

FM NAVSURFWARCEN SHIPSYSENGSTA PHILADELPHIA PA//631//

**SUBJ: PLASTIC WASTE PROCESSOR FLEET ADVISORY NO. 98-5**

REF A IS NAVSEA TECH MANUAL S9593-C4-MMM-010 AND APPLIES TO THE PLASTIC WASTE PROCESSOR (PWP).

1. THE TYCOMS ARE REQUESTED TO INSTRUCT EACH OF ITS SHIPS, ADDRESSED ABV, TO EXAMINE THE SHIPS SERVICE POWER SUPPLY CONNECTIONS TO EACH OF ITS PWP COMPRESS MELT UNIT (CMU) REAR ELECTRICAL ENCLOSURES. THIS REQ WAS PROMPTED BY THE RECENT DISCOVERY OF INCORRECTLY WIRED ENCLOSURES ABOARD USS JOHN C STENNIS. IF NOT CORRECTED, THE INSTALLED WIRE CONFIGURATION COULD HAVE CAUSED THERMAL DEGRADATION TO THE INTERNAL WIRING, RENDERING EACH CMU INOPERABLE. THIS MSG ONLY APPLIES TO SHIPS WITH CMU REAR ELECTRICAL ENCLOSURES WHOSE SERIAL NUMBERS ARE W001 THRU W215 AND U001 THRU U046.
  2. TO CHECK THE WIRING, S/F SHOULD DEENERGIZE AND TAG OUT EACH CMU. OPEN THE REAR ELECTRICAL ENCLOSURE DOOR AND LOCATE THE MF CONTACTOR. THE MF CONTACTOR IS IN THE EXTREME LEFT SIDE OF THE ENCLOSURE AND IMMEDIATELY ABV THE MR CONTACTOR. THE POWER SUPPLY CABLE (W100) FROM THE MAIN SWITCH SHOULD BE CONNECTED TO THE MF CONTACTOR. COMPARE THE CONNECTIONS TO THE MF CONTACTOR TO FIGURE 5-3, SHEET 3 OF 4 ON PAGE 5-254 OF REF A. THE THREE POWER SUPPLY CABLE CONDUCTORS (W100-A, W100-B AND W100-C) SHOULD BE CONNECTED TO TERMINALS ONE (1), FIVE (5) AND SEVEN (7) OF THE MF CONTACTOR. IF WIRING IS INCORRECT, REWIRE IAW FIGURE 5.3 OF REF A. WHEN REWIRING, THE ROTATION OF THE CMU DRIVE MOTOR SHOULD BE VERIFIED PRIOR TO OPERATION BY PERFORMING THE INSTALLATION CHECKOUT AND TESTING PROCEDURES, PARAS 8.8.1 AND 8.8.2 IN REF A. PLEASE CONTACT THE POC ABV IF THE WIRING DOES NOT MATCH THIS CONFIGURATION. THE POC E-MAIL ADDRESS IS MARX@MAILGATE.NAVSSES.NAVY.MIL.
  3. ONBOARD USS JOHN C STENNIS, THE THREE POWER SUPPLY CABLE CONDUCTORS (W100-A, W100-B AND W100-C) WERE CONNECTED TO TERMINAL ONE (1) OF FUSES F11, F12 AND F13 INSTEAD OF THE MF CONTACTOR. EACH CMU WAS OPERABLE WITH THIS CONFIGURATION, HOWEVER, THE WIRES FROM THE FUSE BLOCKS ARE OF A THINNER GAGE THAN THOSE FROM THE CONTACTOR AND ARE NOT RATED FOR THE CURRENT BEING DISTRIBUTED TO THE DRIVE MOTOR AND CHAMBER, DOOR AND RAM HEATERS. THIS CONFIGURATION, IF LEFT UNCORRECTED, WOULD HAVE CAUSED THE INSULATION OF THE WIRES FROM THE FUSES TO DEGRADE OVER TIME.
  4. NAVSEA 03L1 CONCURRED WITH THIS ADVISORY.
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# **PWP LESSONS LEARNED**

R 120348Z MAR 98

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ: PLASTICS WASTE PROCESSOR LESSONS LEARNED FLEET ADVISORY NO. 98-6**

REF A COMNAVSEASYS COM RMG 290349ZSEP97 WHICH PROVIDED NOTIFICATION OF PROCEDURAL CHANGES TO PWP INSTALLATION PROCESS TO SUPPORT A ONE TIME PWP INSTALLATION CERTIFICATION.

REF B IS LTR 9593 SER 03L1B/386/970926 WHICH PROVIDED SUPPLEMENTAL SOLID WASTE MANAGEMENT TRAINING AND ORGANIZATIONAL INFORMATION.

REF C IS THE SOLID WASTE MANAGEMENT EQUIPMENT GUIDE (NSWCCD-TR-63-97/25).

REF D IS [HTTP://WWW.NAVYSEIC.COM](http://www.navyseic.com), THE SHIPBOARD ENVIRONMENTAL INFORMATION CLEARINGHOUSE WEBSITE.

REF E IS WAR ON POLLUTION: THE US NAVY'S NEW WEAPON TO FIGHT PLASTIC POLLUTION AT SEA. IT IS A VHS VIDEO SUITABLE FOR USE IN GMT

1. TYCOMS ARE REQUESTED TO RETRANSMIT THIS MESSAGE TO ALL SHIPS. THE NAVY TEAM HAS COMPLETED 134 PWP INSTALLS, 31 INSTALLS ARE IN PROGRESS AND 120 SHIP CERTIFICATIONS HAVE BEEN MADE. THE NAVY IS ON TRACK TO MEET THE REMAINING REQUIRED CONGRESSIONAL MILESTONES FOR PWP INSTALLATION COMPLETION BY 31 DEC 1998.

2. THIS ADVISORY DETAILS LESSONS LEARNED REGARDING TRAINING AND OPERATION OF PLASTICS WASTE PROCESSORS (PWP) WHICH, WHEN FOLLOWED, WILL IMPROVE EQUIPMENT AVAILABILITY AND EASE OF OPERATION/MAINTENANCE. THE LESSONS ARE: A) ALL HANDS INVOLVEMENT ARTICULATED BY SHIPS INSTRUCTION, B) ALL EQUIPMENT OPERATORS AND MAINTAINERS PROPERLY TRAINED AND QUALIFIED, C) USE GENEROUS AMOUNTS OF MOLD RELEASE EMULSION, D) SOLID WASTE SHREDDER SHOULD BE USED TO PREPROCESS PLASTIC PRIOR TO LOADING IN CMU, E) DO NOT OVERFILL THE CHAMBER WITH PLASTIC WASTE, F) USE OF ANYTHING OTHER THAN THE CORRECTLY WEIGHTED RUBBER CUSHIONED HAMMER FOR FORCING OPEN A STUCK DOOR WILL DAMAGE THE CMU DOOR STUB, G) OPEN THE CMU FRONT DOORS AND REMOVE SIDE ACCESS PANELS TO PERFORM DAILY CMU CLEANING, H) PAY PARTICULAR ATTENTION TO LIMIT SWITCHES WHEN PERFORMING DAILY CLEANING, I) DO NOT USE HIGH PRESSURE WATER SPRAYERS FOR CLEANING THE PWP, J) CHECK SPRAY-TIGHT ELECTRICAL ENCLOSURE FASTENERS FOR TIGHTNESS PRIOR TO WATER SPRAY CLEANUP, K) USE A WET DRY VAC FOR INSTALLATIONS WHERE DRAINAGE IS A PROBLEM, L) SCORING OR GOUGING OF THE RAM AND CHAMBER IS NORMAL AND WILL NOT DEGRADE COMPRESS MELT UNIT (CMU) PERFORMANCE, M) COAT THE OUTSIDE OF THE RAM WITH HIGH TEMPERATURE GREASE WHEN REINSTALLING THE RAM AFTER MAINTENANCE, N) ENSURE DOOR LOCKING LUGS ARE PROPERLY SHIMMED IAW TECHNICAL MANUAL. IN ADDITION, TWO PRODUCT IMPROVEMENTS FOR THE CMUS WILL BE BACKFITTED OR MADE AVAILABE SHORTLY. A NEW LATCH KIT WILL BE AVAILABLE SOON TO REPLACE THE CMU

SAFETY COVER LATCH MECHANISM AND A T-BOLT ADJUSTMENT SPRING WILL BE RETROFITTED TO ALL CMU CHAMBER HEATER BAND CLAMPS.

3. SHIPS WITH THE MOST EFFECTIVE SOLID WASTE PROGRAM ARE CHARACTERIZED BY TOP DOWN ALL HANDS INVOLVEMENT AS DIRECTED IN THEIR OWN SHIP INSTRUCTION. THESE SHIPS ALSO HAVE GOOD TRAINING PROGRAMS, WHICH SEE TO THE TIMELY COMPLETION OF INTERACTIVE COURSEWARE (ICW) TRAINING, AND A DEMONSTRATED COMMITMENT TO ALL EQUIPMENT OPERATORS AND MAINTAINERS BEING QUALIFIED VIA JOB QUALIFICATION REQUIREMENTS (JQR'S). EQUIPMENT CERTIFICATION PROCESS OF REF A PROVIDES ASSURANCE THAT THE EQUIPMENT INSTALLATION IS SAFE AND RELIABLE TO OPERATE. REF B FORWARDED DOCUMENTATION FOR BUILDING A STRONG SOLID WASTE PROGRAM. REF C PROVIDES GENERAL EQUIPMENT INFORMATION AND SAMPLE SHIP INSTRUCTION AND JQR'S. REF D IS THE INTERNET SITE FOR NAVY AFLOAT ENVIRONMENTAL INFORMATION. THE SOLID WASTE SECTION CONTAINS SAMPLE SHIP INSTRUCTION AND JQR'S WHICH MAY BE DOWNLOADED IN SEVERAL ELECTRONIC FORMS. REF E PROVIDES A GOOD OVERVIEW OF THE EQUIPMENT THAT IS RECOMMENDED FOR ALL HANDS GMT.

4. IT IS CRITICAL TO APPLY GENEROUS AMOUNTS OF PROPERLY MIXED (E.G., 4:1 RATIO WATER TO RELEASE AGENT) MOLD RELEASE EMULSION TO ALL INTERIOR SURFACES OF THE CMU CHAMBER, RAM FACE AND DOOR FACE IMMEDIATELY AFTER CLEANING AND PRIOR TO LOADING PLASTIC WASTE. THE MOLD RELEASE SERVES TO LUBRICATE THE RAM, EASE REMOVAL OF THE DISKS OF PROCESSED PLASTICS WASTE AND SIMPLIFY CMU CLEANING. AS A LUBRICANT, THE MOLD RELEASE EXTENDS THE LIFE OF THE CHAMBER BY REDUCING FRICTION. THOUGH DESIGNED TO TOLERATE WEAR, CHAMBER LIFE CAN BE SHORTENED IF MOLD RELEASE EMULSION IS NOT LIBERALLY APPLIED. MOLD RELEASE SIMPLIFIES DISK REMOVAL AND CLEANUP BY PREVENTING PLASTIC AND FOOD WASTE FROM STICKING TO THE DOOR, RAM AND CHAMBER. A DISK CAN BE REMOVED BY SIMPLY PRYING ONE SIDE OF THE DISK WITH A PUTTY KNIFE AND THE ENTIRE DISK SHOULD JUST POP OFF THE RAM, LEAVING ONLY A SMALL AMOUNT OF FLASHING TO BE CLEANED UP.

5. FOR SHIPS EQUIPPED WITH A SOLID WASTE SHREDDER, USE OF THE SHREDDER TO PREPROCESS PLASTIC WASTE BEFORE CMU PROCESSING CREATES A HEAVIER, MORE UNIFORM AND COMPACT DISK. CMU THROUGHPUT CAN INCREASE SIGNIFICANTLY WHEN PLASTIC IS FIRST SHREDDED. THIS REDUCES NUMBER OF CMU CYCLES, SIGNIFICANTLY REDUCING PMS WHICH IS GEARED TO NUMBER OF CMU CYCLES.

6. DO NOT OVERFILL CMU CHAMBER WITH PLASTIC WASTE. LOADING PLASTIC TO A LEVEL ABOVE THE TOP EDGE OF THE CMU CHAMBER WILL CAUSE PLASTIC TO BECOME CAUGHT BETWEEN THE DOOR AND THE TOP EDGE OF THE CHAMBER. PLASTIC BETWEEN THE DOOR AND CHAMBER CREATES A SMALL GAP FROM WHICH PLASTIC AND FOOD WASTE ARE EXTRUDED DURING THE COMPRESS/MELT CYCLE. THE EXTRUDED MATERIAL COLLECTS ON THE TOP PLATE, TOP OF THE CHAMBER HEATER/COOLER ASSEMBLIES AND ALONG THE SIDES OF THE CMU, MAKING CLEANUP MORE TEDIOUS. EXCESS PLASTIC MAY

ALSO MELT BETWEEN THE CHAMBER AND DOOR CAUSING THE DOOR TO STICK CLOSED AT THE END OF CYCLE.

7. IF THE DOOR REMAINS STUCK CLOSED AFTER COMPLETING THE PROCESS CYCLE REFER TO PARAGRAPH 5.2.3.25 OF THE PLASTICS PROCESSOR TECHNICAL MANUAL FOR THE CORRECT TROUBLESHOOTING PROCEDURE. IF IT IS NECESSARY TO FORCE THE DOOR OPEN, USE THE CORRECTLY WEIGHTED RUBBER CUSHIONED HAMMER TO TAP THE DOOR STUB TO OPEN. THE NSNS FOR THE HAMMER AND ITS RUBBER INSERTS ARE 9Q 5120-00-903-8552 AND 9Q 5120-00-555-2086 AND BOTH ARE LISTED ON AEL 2-920016532. USE OF ANYTHING OTHER THAN THE SPECIFIED HAMMER WILL RESULT IN DAMAGE TO THE DOOR STUB.

8. REMOVE CMU SIDE ACCESS PANELS AND OPEN FRONT DOORS FOR DAILY CMU CLEANING. ALL INTERNAL SURFACES SHOULD BE SPRAYED WITH HOT WATER TO REMOVE AS MUCH FOOD RESIDUE AS POSSIBLE. SPRAY DOWN AND CLEAN WITH SCOURING PAD, SCRAPER AND CLEANING SOLUTION THE BALL SCREW ACTUATOR, SPEED REDUCER, UNIVERSAL JOINTS, ACTUATOR PLATE, CHAMBER HEATER/COOLER ASSEMBLIES, HOSES, COMPRESSION SPRINGS AND ALL INTERIOR SURFACES FROM THE SIDES OF THE CMU THEN SPRAY AND CLEAN THOSE COMPONENTS AND INTERNAL SURFACES FROM THE FRONT OF THE CMU. PAY PARTICULAR ATTENTION TO CLEANING LIMIT SWITCH ARMS LS1 AND LS3 LOCATED ON THE UPPER FRAME TOP PLATE, AND LIMIT SWITCH ARMS LS4 AND LS5 LOCATED INSIDE THE CMU. IF THEY ARE NOT REGULARLY CLEANED, THE EQUIPMENT WILL NOT OPERATE PROPERLY. THE SIDE PANELS ARE EASILY REMOVED BY TWISTING FOUR (4) QUARTER TURN FASTENERS. CAUTION: DO NOT USE A POWER SPRAYER ON THE PWP OR ANY OF ITS COMPONENTS. CAUTION: THE SIDE PANELS SHOULD BE REINSTALLED IMMEDIATELY UPON COMPLETING THE CLEANUP PROCESS TO PREVENT POTENTIAL BURN HAZARD FROM EXPOSED CHAMBER HEATERS DURING CMU OPERATION. CAUTION: ENSURE ALL SPRAY TIGHT ELECTRICAL CABINET FASTENERS ARE CHECKED TIGHT PRIOR TO WATER SPRAY CLEANUP. PMS IS BEING UPDATED ACCORDINGLY.

9. USE OF A WET DRY VACUUM CLEANER IS RECOMMENDED FOR THOSE INSTALLATIONS WHERE DRAINAGE PROVIDED BY DECK DRAINS IS MARGINAL. SOME INSTALLATIONS HAVE INSUFFICIENT DECK SLOPE OR OBSTRUCTIONS WHICH ALLOWS LIQUID FOOD WASTE FROM THE EQUIPMENT TO COLLECT IN POOLS. IT IS NECESSARY TO THOROUGHLY WASH DOWN THESE AREAS AND VACUUM OUT THE EXCESS WATER TO ENSURE THE SPACE REMAINS AS CLEAN AS POSSIBLE.

10. SUPERFICIAL GOUGING OF RAM AND CHAMBER IS NORMAL. DO NOT REPLACE CHAMBER OR RAM FOR SUPERFICIAL SCORING OR GOUGING. THE CHAMBER IS DESIGNED TO BE SOFTER THAN THE RAM AND WILL TOLERATE SIGNIFICANT WEAR. THE CMU CHAMBER MUST BE REPLACED ONLY IF IT HAS SUFFICIENT SCORING, GOUGING AND/OR GALLING TO PERFORATE THE CHAMBER WALL. EXTENSIVE USE OF MOLD RELEASE EMULSION MINIMIZES THIS WEAR. IF GOUGING OF THE CHAMBER OR RAM OCCURS, FILE OR GRIND OFF ANY RAISED MATERIAL SO THAT ANY EDGES ARE SMOOTH. THE TECHNICAL MANUAL IS BEING UPDATED ACCORDINGLY. IAW PMS, PULLING THE RAM MORE



FREQUENTLY THAN EVERY 80 CYCLES IS REQUIRED ONLY IF MESSAGE 46, 47, 48 OR 49 APPEAR ON THE MESSAGE DISPLAY UNIT. THESE MESSAGES INDICATE THERE MAY BE TOO MUCH RESISTANCE BETWEEN THE RAM AND CHAMBER. THE RESISTANCE CAN BE THE RESULT OF A WORN CHAMBER HAVING ALLOWED TOO MUCH PLASTIC WASTE TO ACCUMULATE AROUND THE SIDE OF THE RAM. SOME PLASTIC BUILDUP BETWEEN THE RAM AND CHAMBER IS NORMAL, IT IS CALLED FLASHING.

11. WHEN REMOVING AND RE-INSTALLING THE RAM FOR MAINTENANCE, CARE MUST BE EXERCISED TO PREVENT DAMAGE TO THE ELECTRICAL CABLES AND COOLING WATER HOSES ATTACHED TO THE UNDERSIDE OF THE RAM. GUIDANCE FOR REMOVING AND RE-INSTALLING THE RAM IS PROVIDED IN MRC 76-C3QA-N AND SECTION 6.3.3 OF THE PLASTICS PROCESSOR TECHNICAL MANUAL. SINCE THE BUNDLING OF CABLES AND HOSES MAY BE DIFFERENT FOR EACH CMU, THE RAM SHOULD BE PULLED UP SLOWLY BY THE CHAIN FALL, FEELING FOR ANY RESISTANCE OR CATCHING OF THE BUNDLE OF CABLES AND HOSES. RAM ROTATION SHOULD BE MINIMIZED AND THE RAM SHOULD BE RAISED UNTIL IT JUST CLEARS THE TOP OF THE CHMBER (I.E., NO MORE THAN 0.5 INCHES ABOVE THE TOP OF THE CHAMBER), AND THEN SLOWLY TILTED (FROM FRONT TO BACK) UNTIL A VISUAL INSPECTION OF THE UNDERSIDE OF THE RAM CAN BE PERFORMED. WHILE LOWERING THE CHAIN FALL AND RAM TO TAKE TENSION OFF OF THE BUNDLE, CONTINUE TILTING THE RAM BACK UNTIL IT IS RESTING AT AN ANGLE ON TOP OF THE CHAMBER. MAINTENANCE AND CLEANING CAN BE PERFORMED WITH THE RAM IN THIS TILTED POSITION. THE SAME CARE SHOULD BE TAKEN TO NOT PINCH THE CABLES OR HOSES WHEN RE-INSTALLING THE RAM. PRIOR TO LOWERING THE RAM BACK INTO THE CHAMBER, A LIBERAL COATING OF HIGH TEMPERATURE GREASE (GREASE, HIGH-PERFORMANCE MULTI-PURPOSE DOD-G-24508, SPMIG 1596) SHOULD BE APPLIED TO THE OUTSIDE RAM SURFACE. THE EQUIPMENT PMS IS BEING ADJUSTED ACCORDINGLY.

12. IF EXCESSIVE FLUID OR PLASTIC WASTE IS BEING EXTRUDED FROM A GAP BETWEEN THE DOOR AND THE TOP EDGE OF THE CHAMBER OR THE DOOR BECOMES STUCK CLOSED REPEATEDLY, THE DOOR LOCKING LUGS MAY NOT BE PROPERLY SHIMMED. REFER TO THE TECHNICAL MANUAL, PARAGRAPH 6.2.4.1, FOR THE PROPER ADJUSTMENT PROCEDURE FOR THE LOCKING LUGS. GAPS THAT ARE TOO WIDE ALLOW THE DOOR TO OVER TRAVEL CREATING A STUCK DOOR SITUATION. GAPS THAT ARE TOO NARROW PREVENT ADEQUATE LUG CONTACT WHICH MAY LEAD TO A STUCK DOOR CONDITION OR EXCESSIVE LEAK BY BETWEEN THE DOOR AND TOP OF CHAMBER. THE TROUBLESHOOTING SECTION OF THE TECHNICAL MANUAL, CHAPTER 5, IS BEING UPDATED ACCORDINGLY.

13. A NEW LATCH KIT CONSISTING OF AN INSERT PIN AND LANYARD WILL SOON BE AVAILABLE TO REPLACE THE LATCH MECHANISM ON THE CMU SAFETY COVER. THE NEW LATCH DESIGN WILL PROVIDE SECURE AND TROUBLE-FREE CLOSING OF THE SAFETY COVER. THE KIT WILL COME WITH INSTRUCTIONS AND TOOLS SUITABLE FOR RETROFITTING BY SHIPS FORCE. T-BOLT ADJUSTMENT SPRINGS WILL BE RETROFITTED TO THE CHAMBER HEATER BAND CLAMPS ON

ALL INSTALLED CMUS BY IN-SERVICE ENGINEERING PERSONNEL. THE SPRINGS WILL SIMPLIFY ADJUSTMENT OF THE BAND CLAMPS. BAND CLAMPS THAT ARE TOO TIGHT ON THE CHAMBER CAN CAUSE RAM MOVEMENT (E.G., RAM BINDING) PROBLEMS. BAND CLAMPS THAT ARE TOO LOOSE MAY INCREASE PROCESSING TIMES. THE TECHNICAL MANUAL IS BEING UPDATED ACCORDINGLY.

14. POC FOR OPERATIONAL ISSUES IS MR. S. MARX, NSWCCD-SSSES CODE 631, TEL: 215-897-7270, DSN 443-7270, MARX@MAILGATE.NAVSSES.NAVY.MIL. NAVSEA POC FOR ORGANIZATIONAL AND OPERATIONAL ISSUES MAY BE REACHED BY EMAIL AT MARKLE\_STEPHEN\_P\_LCDR@HQ.NAVSEA.NAVY.MIL.//

# **Oil Pollution Abatement (OPA)**

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- COMNAVSEA WASH DC 010348Z MAY 98 (Oil Pollution Abatement (OPA) Equipment Advisory)
- NSWCCD-SSES PHIL PA 221410Z JUL 99 (ET-35N Oil Content Monitor (OCM) Calibration Program)

R 010348Z MAY 98

FM COMNAVSEASYS COM WASHINGTON DC//03L//

**SUBJ: OIL POLLUTION ABATEMENT (OPA) EQUIPMENT ADVISORY**

REF A: OPNAVINST 5090.1B

REF B: NAVSEA RMG 200348ZJAN98

1. SUMMARY: THIS MESSAGE ADDRESSES THE NAVY OIL POLLUTION ABATEMENT PROGRAM AND PROVIDES RECOMMENDATIONS TO ENABLE RELIABLE OPERATION OF OIL WATER SEPARATORS (OWS) AND OIL CONTENT MONITORS (OCM).
2. BACKGROUND: IAW REF A, THE NAVY HAS ESTABLISHED THE OIL POLLUTION ABATEMENT (OPA) PROGRAM TO LIMIT THE DISCHARGE OF OIL FROM NAVAL SHIPS AND CRAFT IN COMPLIANCE WITH INTERNATIONAL, FEDERAL, STATE, AND LOCAL REGULATIONS. AS PART OF THE NAVY'S PROGRAM, OWS'S AND OCM'S HAVE BEEN INSTALLED ON MOST NAVY SHIPS.
3. IAW REF A, NAVY SHIPS EQUIPPED WITH AN OWS AND OCM SHALL ATTEMPT TO LIMIT OIL AND OILY DISCHARGES TO 15 PPM OF OIL WORLDWIDE. OWS SYSTEMS WILL ROUTINELY PRODUCE AN OUTPUT OF LESS THAN 15 PPM IF OPERATING PROPERLY AND IF THE OILY WASTE DOES NOT CONTAIN DETERGENTS OR EMULSIFYING AGENTS OR SOLID MATTER WHICH CAN CLOG THE SEPARATOR PLATES. SURFACE SHIPS WITH OWS'S BUT WITHOUT OCM'S SHALL PROCESS ALL MACHINERY SPACE BILGE WATER THROUGH AN OWS SYSTEM BEFORE DISCHARGE. SURFACE SHIPS WITHOUT AN OWS BUT WITH AN OILY WASTE HOLDING TANK (OWHT) SHALL DIRECT ALL OILY BILGE WATER TO THE OWHT FOR SHORE DISPOSAL. SURFACE SHIPS WITH NEITHER AN OWS OR OWHT SHALL RETAIN ALL OILY BILGE WATER FOR SHORE DISPOSAL. DISCHARGES ARE PERMITTED BEYOND 50NM FROM THE NEAREST LAND FOR SHIPS WITHOUT AN OWS OR OWHT IF OPERATING CONDITIONS ARE SUCH THAT OILY BILGE WATER DISCHARGE MUST BE DISPOSED OF AT SEA. NOTE THAT DISCHARGES BEYOND 50NM ARE ONLY FOR THOSE SHIPS WITHOUT AN OWS OR OWHT AND THEN ONLY IF OPERATING CONDITIONS DO NOT PERMIT ONBOARD RETENTION. FOR ALL OTHER SHIPS, DISCHARGE OF THE WOT (WASTE OIL TANK), OWHT, AND ANY OTHER OILY WASTE BEYOND 50NM IS PROHIBITED.
4. EXEMPTIONS TO THE REQUIREMENTS ABOVE ARE PROVIDED IN REF A AND COVER CIRCUMSTANCES SUCH AS INOPERABLE OPA EQUIPMENT, REMOTE SPACE OILY WASTE DISCHARGE, DISCHARGES TO PREVENT MACHINERY OR OPA EQUIPMENT DAMAGE, AND EMERGENCIES.
5. SHIPS EQUIPPED WITH AN OWS AND OCM MAY USE THEM IN MOST PORTS. CONSULT WITH SUPPORTING SHORE FACILITY HOST COMMAND FOR DISCHARGE REQUIREMENTS. THE STANDARDS OF MOST PORTS CAN BE MET WITH PROPERLY FUNCTIONING OPA EQUIPMENT.
6. TO ENABLE OWS'S TO PERFORM MORE EFFECTIVELY, BILGE CLEANERS OR CHEMICAL AGENTS THAT PROMOTE STABLE CHEMICAL EMULSIONS SHALL NOT BE USED. IAW REF A, SHORT-LIVED DETERGENTS SHALL ONLY BE USED FOR BILGE CLEANING. ALLIED FORMULA P-98 BILGE CLEANER/SHORT-LIVED DETERGENT HAS BEEN TESTED AND FOUND TO BE COMPATIBLE WITH ALL OWS'S AND OCM'S. ALLIED P-98 IS IDENTIFIED BY NSN 6850-01-278-4420 (55 GAL

DM), 6850-01-278-3858 (30 GAL DM), AND 6850-01-278-4421 (5 GAL CN). MIL-D-16791 GENERAL PURPOSE DETERGENT HAS ALSO BEEN FOUND TO BE COMPATIBLE WITH OWS'S AND OCM'S AND IS ALSO RECOMMENDED FOR USE. MIL-D-16791 IS AVAILABLE UNDER NSN 9Q7930-00-282-9699 (1 GAL CN), 9Q7930-00-985-6911 (5 GAL CN), AND 9Q7930-00-282-9700 (55 GAL DM).

7. AQUEOUS FILM FORMING FOAM (AFFF) SHALL NOT BE USED AS A BILGE OR EQUIPMENT CLEANING AGENT. AFFF IS A SURFACTANT THAT CREATES A STRONG CHEMICAL EMULSION THAT IS RESISTANT TO OIL/WATER GRAVITY SEPARATION. THIS EMULSION COATS THE POLYPROPYLENE PLATES WITHIN THE OWS AND INHIBITS THE COALESCENCE OF OIL DROPLETS ON THE PLATES ALLOWING OIL DROPLETS TO PASS THROUGH THE SEPARATOR. AFFF CAN ALSO COAT THE OWS'S PRIMARY AND BACK-UP OIL SENSORS AND CAUSE THEM TO FAIL. IN SHORT, AFFF SIGNIFICANTLY DEGRADES OWS PERFORMANCE. THE DISCHARGE OF AFFF TO BILGES SHOULD BE LIMITED TO REQUIRED OPERATIONAL INSPECTIONS AND EMERGENCIES. IAW REF A, OILY WASTE THAT CONTAINS CHEMICAL EMULSION AGENTS SHALL BE OFFLOADED TO SHORE RECEIVING FACILITIES. SEE DICHARGE EXEMPTIONS OF REF A IF DISCHARGE OF AFFF CONTAMINATED BILGE WATER IS REQUIRED AT SEA.

8. OPA EQUIPMENT SHOULD BE USED REGULARLY. INTERMITTENT AND INFREQUENT USAGE WILL RESULT IN HARDWARE DEGRADATION. CURRENT PMS PERIODICITY FOR CLEANING OF PARALLEL PLATES IS BEING REVIEWED. MORE FREQUENT PMS CLEANING MAY BE REQUIRED TO ENSURE OPTIMUM FUNCTIONING OF THE OWS. A COMMON CAUSE OF HIGH OIL CONTENT IN THE EFFLUENT FROM THE OWS IS SLUDGE COATED PARALLEL PLATES. NON-OIL CONTAMINANTS AND HAZARDOUS MATERIALS CANNOT BE PROCESSED BY THE OWS AND CAN INTERFERE WITH THE PROPER FUNCTIONING OF THE OWS. BILGES SHOULD BE KEPT FREE OF SYNTHETIC OILS AND HYDRAULIC FLUIDS, ETHYLENE GLYCOL ENGINE COOLANTS, AFFF, SURFACTANTS AND ORGANIC SOLVENTS. THESE TYPES OF WASTE MUST BE HELD AND PUMPED TO A SHORE FACILITY. BILGE CONTENTS DIRECTLY AFFECTS OWS PERFORMANCE.

9. NAVSEA IS DEVELOPING A SHIPBOARD MEMBRANE POLISHING SYSTEM FOR OWS EFFLUENT THAT WILL PRODUCE AN OVERBOARD DISCHARGE CONTAINING <15PPM OF OIL. A PROTOTYPE SYSTEM IS INSTALLED ON DDG 64, USS CARNEY, AND HAS CONSISTENTLY REMOVED 99% OF POST OWS OIL. THIS SYSTEM WILL ENABLE THE FLEET TO MEET WORLD WIDE OIL POLLUTION PREVENTION REQUIREMENTS.

10. NAVSEA HAS BEGUN AN INSPECTION AND CERTIFICATION PROGRAM FOR OPA EQUIPMENT AND SYSTEMS IAW REF A, DOD AND FEDERAL REGULATIONS. THE CERTIFICATION PROGRAM IS APPLICABLE TO ALL U.S. NAVY SURFACE SHIPS IN WHICH SHIPBOARD OPA EQUIPMENT AND SYSTEMS ARE CURRENTLY INSTALLED OR ARE BEING INSTALLED. OPA EQUIPMENT AND SYSTEMS INCLUDE THE OWS, OCM, OWHT, OILY WASTE TRANSFER SYSTEM, WOT AND THEIR ASSOCIATED COMPONENTS. THE CERTIFICATION PROGRAM ENSURES THAT OPA EQUIPMENT HAS BEEN PROPERLY INSTALLED AND MAINTAINED AND THAT IT IS OPERATIONAL. OPA EQUIPMENT IS INSPECTED AND CERTIFIED DURING NEW CONSTRUCTION OR DURING EQUIPMENT INSTALLATION. SYSTEMS THAT ARE

CURRENTLY INSTALLED ARE PERIODICALLY INSPECTED EVERY 24 MONTHS AND RECERTIFIED EVERY FIVE YEARS BY THE TYCOM.

11. REF B ESTABLISHED THE CALIBRATION PROGRAM FOR THE ET-35N OCM. THE ET-35N OCM REQUIRES CALIBRATION AFTER 2000 OPERATING HOURS. THIS PROGRAM WILL PROVIDE FULLY CALIBRATED KITS TO THE FLEET.

CALIBRATION OF THE ET-35N IS ACCOMPLISHED BY REPLACING THE SAMPLE AND DETECTION ASSEMBLY AND PROCESSOR PCB WITH THOSE FROM A CALIBRATION KIT. THE CALIBRATION KITS CAN BE OBTAINED FROM NSWCCD-SSES. THE OLD COMPONENTS ARE TO BE SHIPPED BACK TO NSWCCD-SSES.

12. TRAINING IN EQUIPMENT OPERATION AND MAINTENANCE IS AVAILABLE THROUGH TRAINING COURSE K-652-2196 OFFERED AT THE FLEET TRAINING CENTERS. ONBOARD TRAINING IS ALSO PROVIDED AS PART OF THE CERTIFICATION INSPECTION PROCESS. SUPPLEMENTAL TRAINING VIDEOS ARE BEING DISTRIBUTED VIA THE CERTIFICATION PROGRAM OR CAN BE ORDERED BY CONTACTING THE POCS LISTED BELOW. FURTHER PROGRAM AND EQUIPMENT INFORMATION IS AVAILABLE AT THE NAVY SHIP ENVIRONMENTAL INFORMATION CLEARING HOUSE WEBSITE AT [WWW.NAVYSEIC.COM](http://WWW.NAVYSEIC.COM) AND THROUGH THE SHIPBOARD ENVIRONMENTAL PROTECTION NEWSLETTER.

13. CONCLUSION/INFLUENT MANAGEMENT AND PROPER EQUIPMENT MAINTENANCE ARE CRUCIAL FOR OPTIMUM OPA EQUIPMENT PERFORMANCE. NAVSEA HAS INITIATED PROGRAMS TO ENSURE THAT THE SYSTEMS ARE OPERATIONAL AND MAINTAINED PROPERLY BUT COOPERATION AND DEDICATION BY THE FLEET USER IS ESSENTIAL FOR THE SUCCESS OF THESE PROGRAMS.

14. NAVSEA POINT OF CONTACT IS MR. BRAD SMITH SEA 03L12. 703-602-8144 X202. NSWC PHILADELPHIA POINT OF CONTACT IS MR. TONY MORALES NSWCCD-SSES CODE 631 (215) 897-7697.

BT

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FM NAVSURFWARCN SHIPSYSENGSTA PHILADELPHIA PA//631//  
UNCLAS //N09593//  
MSGID/GENADMIN/NSWCCD-SESS 631//  
**SUBJ/ET-35N OCM CALIBRATION//**  
REF/A/MSG/NSWCCD-SSES 631/200348ZJAN98/-/NOTAL//  
REF/B/TEL/NSWCCD-SSES 631/-//  
REF/C/TEL/NSWCCD-SSES 631/-//  
NARR/REF B IS TELCON BTWN NSWCCD-SSES 631 (MORALES)/NAVSEA 03L13  
(SMITH). REF C IS TELCON BTWN NSWCCD-SSES 631 (MORALES)/NAVICP  
05829 (MCCAW).//  
POC/R. MORALES/CIV/631/-/TEL:215-897-7639/TEL:DSN 443-7639//  
RMKS/1. THIS MSG UPDATES REF A, AND APPLIES ONLY TO THE MODEL ET-35N  
OIL CONTENT MONITOR (OCM). IAW TECH MANUAL NUMBER S9593-CD-MMO-101/  
25204 DTD 15 MAR 90 AND MAINTENANCE INDEX PAGE (MIP) 5932/018-46, THE  
ET-35N OIL CONTENT MONITOR (OCM) REQUIRES CALIBRATION OF THE SAMPLE  
AND DETECTION SUB-ASSEMBLY (SDA), P/N ST1037-1, AND PROCESSOR PRINTED  
CIRCUIT BOARD (PCB), P/N ST1004, AS A MATCHED SET EVERY 2000 HOURS OF  
OPERATION. CALIBRATED SDA/PROCESSOR PCB MATCHED SETS, ALONG WITH  
ELAPSED TIME INDICATOR (ETI) P/N ST1043 AND SHIPPING CASE, ARE NOW  
AVAILABLE THRU THE STOCK SYSTEM AS CALIBRATION KITS. THE NATIONAL  
STOCK NUMBERS (NSN) FOR THESE CALIBRATION KITS ARE:  
A. 15/70 PPM CALIBRATION KIT: NSN 7H 6625-01-456-5671.  
B. 200 PPM CALIBRATION KIT: NSN 7H 6625-01-456-5669  
(THE 200 PPM CALIBRATION KIT IS USED ONLY FOR POLYMERIC POLISHING  
UNITS INSTALLED ONBOARD SOME DDG-51 CLASS SHIPS).  
  
2. ALL THE COMPONENTS OF THE CALIBRATION KIT ARE TURN IN ITEMS.  
ONCE THESE COMPONENTS ARE INSTALLED PER MIP 5932/018-46, THE OLD  
COMPONENTS MUST BE PUT INTO THE SHIPPING CASE AND RETURNED TO THE  
SUPPLY SYSTEM.  
  
3. THE PMS AND APL WERE REVISED TO REFLECT THE NEW CALIBRATION  
PROCESS FOR THE ET-35N OCM.  
  
4. NAVSEA AND NAVICP CONCURRENCES WERE OBTAINED VIA REFS B AND C,  
RESPECTIVELY. NAVSEA POC IS MR. BRAD SMITH, SEA 03L13,  
(703) 602-8144 EXT 202. THE NAVICP POC IS MR. TIM MCCAW, CODE 05829,  
(717) 605-1904. THE NSWCCD-SSES POC IS MR. RAY MORALES, CODE 631,  
(215) 897-7639.//

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